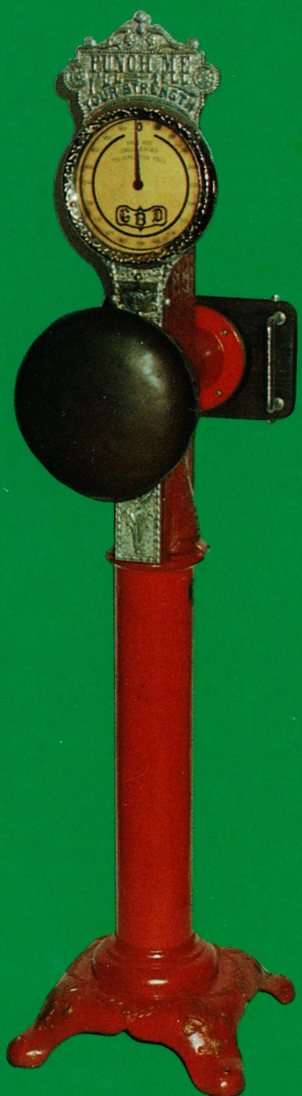
ARCADE 1

Illustrated Historical Guide
to Arcade Machines
Volume 1

RICHARD M. BUESCHEL
and STEVE GRONOWSKI









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and Steve Gronowski

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Ancient Lands to Wonderlands 3600 BP to 1905.
The Origins of coin-operated public amusements and the appearance of the Penny Arcade.
Popular Arcade Machines of the 1870-1905 period listed by maker, name and date.

"Prior to 1907...the Penny Arcade was a higher class center of entertainment attracting the best class of customers and providing an attractive atmosphere through beautiful furnishings and well kept machines." Interview with O.R. Hermanek, Minneapolis Arcade operator, formerly Mills Novelty Arcade Manager in Chicago, Chattanooga, Louisville, St. Paul, and Minneapolis, *Automatic Age*, January 1938.

Compiled and written by
Richard M. Bueschel
and Steve Gronowski

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enthusiasts, historians, dealers and collectors of all forms of vintage coin-operated machines.

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DEDICATED TO

Vi (Violet) and Mary Gronowski

The two women in Steve Gronowski's life — his mother and his wife — who gave him the aesthetic sense and the smarts to get involved in something as charming and exhilarating as arcade machines.

Other Books by Dick Bueschel

Communist Chinese Airpower (Praeger, 1968)
Aircam Japanese Fighters, 8 volumes (Osprey, 1970-1971)
Aircam Japanese Bombers, 4 volumes (Osprey, 1972-1973)
An Illustrated Guide to the 100 Most Collectible Slot Machines, 4 volumes (Coin Slot 1978-1985)
An Illustrated Guide to the 100 Most Collectible Trade Stimulators, 2 volumes (Coin Slot 1978-1980)
The Coin Slot Guides, 34 volumes (Coin Slot 1979-1983)
Slots 1: Illustrated Historical Guide to Slot Machines, 1 volume (Hoflin, 1988)
Pinball 1: Illustrated Historical Guide to Pinball Machines, 1 volume, 10 projected (Hoflin, 1989)
Trade 1 and Trade 2: Illustrated Historical Guide to Trade Stimulators, 2 volumes (Hoflin, 1992)
Bueschel's Saloon Series — 1 volume, 2 projected, B.A. Stevens Billiard and Bar Goods, Toledo, Ohio (Hoflin, 1990)
Jennings Slot Machines (Hoflin, 1992)

Books by Dick Bueschel in collaboration with Steve Gronowski

Arcade 1: Illustrated Historical Guide to Arcade Machines, 1 volume, 5 projected (Hoflin, 1993)

Cover Photos

Clockwise from top:
Midland ELECTRICITY IS LIFE (1899-1909)
Peo BARN YARD GOLF (1931-1932)
Nutting COMPUTER SPACE (1971)
Caille Bros. OLYMPIA PUNCHER (1906-1913)

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About Pricing for the Volume

The vintage arcade machine prices indicated in the insert folder facing the inside back cover have been based on averages of current market values or "best estimates" for the machines listed as provided by a panel of seven vintage arcade machine collectors and dealers at the time of publication. These prices should not be regarded as firm buy-or-sell but rather should be used as approximate value indicators. Like many fine antiques, vintage coin machine values tend to frequently fluctuate, both up and down, with market values different than those with this volume to be expected at any point in time. Buyers and sellers should expect to pay or receive amounts based on the many current market variables of value, condition, operating features and machine popularity — particularly the current "Fad Factor" — at the time of any transaction. While the prices expressed for this volume cannot be expected to reflect the precise market values at variable points in time, they do provide a guide to specific desirability and reveal the value and status relationships between one and another.

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FOREWORD

Illustrated Historical Guide to Arcade Machines

Arcade 1

The first volume of five covering the complete history of arcade machines from 3600 B.P. (Before Present) to the present day. Each volume also illustrates and describes 100 different vintage arcade machines and contains a supplemental fold-out that lists their current values — the full set covering 500 machines in all, plus their variations.

This is the first volume in a series of books that might never have been written except for the nagging insistence of a small group of dedicated coin-operated arcade machine collectors and enthusiasts. It all started less than a year after the publication of Dick Bueschel's first automatic payout slot machine guide book, itself a one-shot venture in the summer of 1978 that ultimately led to a multi-volume series that has yet to reach its end. At a Roy Arrington Royal Victorian Antiques auction in Las Vegas in March 1979, for years the only gathering place for vintage coin machine enthusiasts the world over, arcade machine collector Ralph Bounty of Stamford, Connecticut, and antique dealer Ira Warren of Brooklyn, New York, collared author Dick Bueschel saying, "You've got to do one for arcade machines. They're more interesting." Bueschel's reply was, "I don't think I can. I don't know enough." A year later, at the same annual auction, collectors Tim LaGanke, Mike Gorski and Bob Legan, all of Ohio, made the same suggestion. Bueschel's reply had modified to, "I'll take a look at what I can find."

The first step, and stop, was with fellow Chicago-area coin machine enthusiast Steve Gronowski, who by that time had already established his niche as the leading finder, restorer and purveyor of vintage arcade machines in the country. Steve's encouragement and help was unstinting, providing full access to a drawer packed with catalogs, notes, advertising and pictures of arcade machines that he had picked up in a dozen or so years of collecting. At that meeting, photographs were also taken of the 30 or so arcade machines in Steve's collection. Arcade machine collectors Tim LaGanke and Bob Legan did the same thing, providing freely of their collected papers to get the assemblage of information started. With that, Bueschel organized the materials in 3 or 4 notebooks and started to search for more hard data in old trade publication, among other collectors, in antique and used book shops, at Flea Markets, through advertising, finally in libraries, historical societies, and in local and state business records across the country, ultimately reaching out to Great Britain, France, Australia and Germany following an unending string of informational leads. By the time the hundredth large 3-ring binder was filled (this collection is now housed in over 200 binders!), it was obvious there was a story to be told.

At that point, in the spring of 1983, things got serious. Co-authors Bueschel and Gronowski, pulling themselves out of a Gronowski-sponsored Chicagoland Antique Advertising and Coin Machine Show for some bar time, agreed to collaborate. Bueschel would do the writing while Gronowski would do more digging, find old machines to photograph, support the effort with his knowledge and experience and attempt to answer many confusing questions about makers and machines that kept cropping up. An alliance and close working relationship was forged and the demanding task of putting a book together began. It has taken over a dozen years to get something in print from the moment the idea was first proposed that long ago winter of 1979. Yet, this is only the beginning. As Volume 1 of a projected five volume series, this book merely gets the arcade machine story off the ground, although each volume will have an integrity all their own, covering a significant time frame in the history of arcade machines and their placement.

Perhaps, and hopefully, these volumes will lead to a greater appreciation of the arcade machine as an operating reflection of the ever changing manifestations of popular culture, both among enthusiasts and collectors, as well as within the many museums that purport to mirror our past yet often miss a true reflection of what people enjoyed and pursued. It is to enhance the appreciation of the arcade machine, as well as redress their historical omission and pave the way for a new perception of their existence to lead to their proper recognition within the realm of American folk material culture, that those volumes have been complied.

Richard M. Bueschel and
Steve Gronowski
September 10, 1991

THE ORIGINS OF THE SPECIE

No man-made machine had cast a shadow as long or as high, and none would for over four decades after the day it was built, finally afloat the next-to-last day in January, 1858, the year Big Ben first chimed its time over London's Westminster Palace (and named not after Royalty but after its caretaker, Sir Benjamin Hall, a Lord). Built large enough to carry all the coal that was needed for a non–stop trip to Australia, it was never sent on the trip only to be wasted on the highly competitive immigrant routes of the North Atlantic. When cabin boy Henry Davidson reported to "The Big Ship" at Sherness, Kent, on a foggy day in 1866, famed engineer I.K. Brunel's GREAT EASTERN was poised to go to sea once again as a cable layer to make up for all the passenger carrying and cable laying failures of the past. As the massive iron ship made its way to the open water and the Strait of Dover, its every disappearing move watched by Davidson's young bride from shore, Henry settled back to endure if not enjoy the adventure of his life. By the time the 693-foot steam and sail driven monster of the seas had rooted the eastern end of the transatlantic cable at Valentia at Foilhummer Bay at County Kerry in Ireland and headed out across the open North Atlantic for Newfoundland, Henry had become practiced in his duties and found time to watch and consider the wonders of the new industrialized world supporting his feet and filling his eyes. For the next two and a half months, the largest ship yet built uneventfully laid the world's first successful telegraph cable between the Old World and the New, a far cry from the disappointing performance of the past decade, then brought the western terminus ashore at Heart's Content Bay on English soil in the New World, and headed out to sea once again and miraculously recovered the loose end of the older cable that had snapped and been lost at sea the year before. Throughout that seaborne summer of 1866 Henry Davidson dreamed his dreams of personal grandeur. He vowed to make his own contributions to the machine age that had captured the world's imagination, and had made his England the premier world power skilled in the new industrial arts. He was the right person in the right place at the right time, and the man credited as the maker of the world's first penny-in-the-slot exhibition machine.[1]

In later years, in recounting his invention, he would say, "I made the first one (in 1871). It was a miniature house from which a sweep jumped from the chimney when a penny was inserted. I remember that the Prince of Wales, later (King) Edward VII, dropped in half a crown instead of a penny when I showed it at an agricultural fair."[2] To Henry's mind he had created a new form of amusement, the first exhibition machine that paid its own way. He had invented the slot machine, a simulation of life that came alive once a coin of the proper amount had been inserted. Using the specie of his homeland, Henry Davidson had brought new honors to the British realm. He didn't know — he couldn't know — that his fabrication was the culmination of over three thousand five hundred years of development. CHIMNEY SWEEP may have been new, yet its origins went back in time to the prehistory of invention. The past had made the present possible, while the human fascination with simulations of its own kind had made ready acceptance inevitable. Henry Davidson had created a device whose time had come.

Ever since the mythical Greek God Daedalus fired up the boilers in the bowels of his articulated lifesize bronze figures of Hellenistic warriors, to watch them step off once a head of steam had built up, mankind has been fascinated with simulations. Only Daedalus wasn't a God. He was a man, a living and breathing Leonardo Da Vinci of pre-history. Productively inventing around 1,600 B.C. (or 3,600 B.P., "Before Present," as time is now being measured) Daedalus is credited, among his many other mechanical achievements, with the creation of the hammer and the adz, two basic tools of the carpenter. It is difficult to fathom the development of the fabricated world of mankind without considering the discovery and evolution of tools and materials. It is equally difficult to accept the fact that once started, mechanical machines and life simulations suddenly ended. The historical record provides little to fill the gaps, yet this must be the result of a lack of artifact discovery rather than a true hiatus in invention and



The GREAT EASTERN lies at anchorage in Heart's Content Bay in Newfoundland, August 1866, after a successful cable laying transit across the North Atlantic from Ireland. Britisher Henry Davidson, the maker of the world's first coin-operated amusement machine, was a cabin boy on the voyage, exposing him to the latest technology of the age. The Peabody Museum of Salem, Salem MA.

craft. There are enough tantalizing peeks at recovered evidence to suggest a continued tradition of mechanical devices and simulations designed to amuse, entertain and educate. The sophisticated and surprising clockwork mechanism of ancient Greece pulled up in the nets of 20th Century Aegean fishermen, the pre-Christian square rigged sailing vessels both modelled and painted on the walls of underground Etruscan tombs in Italy and the many carved displays and mechanical toys sealed in Egyptian and even New World Mayan pyramids and tombs bear testimony to humankind's continued joy with articulated amusements. Like father, like son, like generations to come, the infection of invention never left the face of the earth once it had started. Daedalus' beloved son Icarus, overriding his father's explicit instructions in an attempt to best his seniors' performance and achievements, lost his own life in the process, a story well documented in Greek mythology. Since then, and probably before, the student has sought to better the teacher. While the cost has often been high — in time, money, frustration, and even life — the process has gone on through the ages as an inexorable human drive. We are an animal that finds joy and entertainment — not to mention achievement and civilization — in ourselves, as often as not derived from the fruits of our fingers. We make things. And we make things in our own image, or within our capability to manipulate or play, to while away our hours and alleviate the grinding sameness of life itself. For life is a boring enough thing at best. Therefore it is the responsibility of the individual to make it worth living. This human need first finds visible expression in the Neolithic cave paintings of our Neanderthal forebears. It opens to full flowering in western mankind's first experiments with self government and creative autonomy in ancient Greece. And in the van, the man that may have initiated our ongoing fascination with mechanical art that imitates life, stands Daedalus.

If Daedalus indeed were a God, he would be the undeniable deity of creativity. Yet his inventiveness more than anything else proves his existence as a man. His travels and accomplishments are so well related by the Greek philosopher and chronicler of the ancient arts Plato (writing around 2,400 B.P.), they can only be rooted in fact. The Roman Poet Ovid (writing around 2,000 B.P.) was also taken with the tales, and was widely read in Europe's Middle Ages. As the story goes, the fame of the accomplished Athenian was so widespread, he found himself in the employ and under the protection of the Minos of Crete, an island despot king that was extracting tribute from a conquered mainland Athens in the form of taxation, not to mention an annual tithe of seven virgins and untested young men. These sad examples of the cream of Athenian youth were fed to the dreaded Minotaur, a cannibalistic creature said to be half man and half bull, in effect a human eating geek. The Minotaur may have given the Minos his power, for the creature was certainly a control device. But how to cage him? That's where Daedalus came in. If any man could devise a way of allowing the Minotaur to freely roam his realm, yet remain encapsulated, the clever Atheni-



The First of the Pierre Jacquet-Droz androids to dazzle Europe in the 18th Century, THE WRITER (called "Charles") is mechanically programmed to write up to 40 characters. Started in 1768. Courtesy Musee d'Art et d'Historie, Neuchatel, Switzerland.



Jacquet-Droz's second android THE ARTIST (named "Henri") can freely draw four sketches with a pencil, and seemingly blow away the dust. Produced around 1771. Courtesy Musee d'Art et d'Historie, Neuchatel, Switzerland.

an could do it. So the Greek inventor, architect and builder found himself in the employ of the enemy on an island far from home.

Daedalus (the translated name means "cunning worker") came by his skills naturally. His father Metion had taught his son the basics of architecture whereas his grandfather had created the craft of wooden structure building, originating the axe, awl or drill bit and lifting bevels in the process. Realizing he had a genius on his hands, the Candian king set his artisan up in the world's first research laboratory, a large experimental workshop where Daedalus — avidly watched and emulated by his infant to growing son — pursued his many interests. He created an all but unmanageable card game with 7,000 different tablets that required a full memory of all the pieces held and played, probably blessedly lost to history. In the area of spatial relationships he created the game of three dimensional chess, designed a theatre where 3,000 seats seemed to be just as good as the next one, and built a palace of over a thousand rooms for the king, some with secret entrances that were probably never found. His moving statues had to be chained down to keep them from walking away on hot days. And he created the labyrinth.

Daedalus is probably remembered in history and mythology more for the labyrinth than anything else. While it does qualify the "cunning worker" as the world's first professional game designer, its form and fabrication touched on only a few of his creative skills. By definition, a labyrinth is a complex maze with a bewildering series of paths, only one of which can lead from its core to the outside, or the same in reverse. What better way to trap the Minotaur in an unlocked cage, with the creature not bright enough to find his way out, whereas the young Athenian men, once fed in the entrance way, could only follow paths that led them to their unhappy fate. It constitutes magnificent game theory. Said to have been built as an outdoor structure, no ruins of the necessarily sizeable configuration have been found, although Cretan coinage began to show labyrinths on their flip side around 400 B.C., or about the time Plato was relating the ancient legends.

Not to credit the man with all things great and glorious, Daedalus had his down side, too. Clever, bright and industrious, he was also vainglorious and sulky. When his sister put her son Perdix under his care to learn the use of tools and the process of inventive thinking, the comprehension of the student was so rapid he soon made his own contributions to the tool box of mankind by inventing the measuring compass and saw, invaluable aids in engineering and building. In a snit, Daedalus tried to kill him by pushing him out of a tower window. Perdix survived — mythology says he was instantly changed into a bird by the Goddess Minerva — to remain as a living example of the deceitful behavior of his famous uncle. The duplicity of Daedalus led to yet another event that stands as one of the strongest stories to survive prehistory. Turning against his mentor, the Minos of Crete, Daedalus helped an Athenian hostage slay the Minotaur (the king's daughter had given the young Greek warrior a sword, and thread to find his way in and then out of the labyrinth. Daedalus may have given her the plans, or revealed the length of thread required) and was suddenly a hunted man. Rushing to a hidden cliffside retreat where he and his son Icarus had been conducting studies in the science of flight, watching the eagles soar and fabricating two sets of wings constructed of feathers attached to a framework and held by wax, long planned test flights were instantly abandoned. It was escape, now or never. Daedalus warned his son not to fly too high lest the sun's rays might heat and melt the wax. As they both leaped off into space, with untested hang gliders their only source of support, they sailed away from their island jail. But Icarus suffered the rapture of flight, following a warm updraft skyward. The wax melted, the feathers separated (more than likely he stalled, and couldn't recover his air speed) and Icarus fell to his death in the waters

below.

Daedalus survived, and ended his years in Sicily, his life saving wings hung as a permanent display in a temple to Apollo built to his plans. Also surviving, for another three and a half millennia, were the tales of his deeds. For those who would emulate his constructions flight remained an unattainable goal until the 20th Century. But those walking (and some sources say talking) bronze figures of antiquity intrigued over ten thousand generations of would-be students of the mechanical arts. It took the funding of patrons, and the enlightenment of oriental and Middle Eastern Khans and medieval European kings, to bring these automatons to the attention of a quickly jaded public. 1,400 years later Hero (that was his name) of Alexandria, a Greek working around 200 B.C., made miniaturized human figures operated by springs, levers and steam in order to explain physical laws and display articulated mechanisms. He even made a coin-operated vending device for temple holy water, the acknowledged birth of the coin machine. Oriental mechanical nightingales and Central European clock towers in which birds sing and lifelike figures ring bells while others chase young women are well known to students of history. So are the rewards to their designers, ranging from honors to plucked eyeballs and death to prevent their repeating or besting their performance for a rival ruler. The personal and financial risks faced by modern-day arcade machine designers seeking a hit may seem similar in comparison, for the public remains as fickle and the rulers of industry just as proprietary.

The difference, as the centuries rushed by in their headlong flight to the modern mechanical and increasingly solid state era, was in the driving power that permitted the advance in automatons. First it was steam, uncontrollable and often of enormous size; followed by the metered dependability of sand and water contained in buckets, cups, and finally closed glass systems — the hourglass is the classic example — in which displaced mass, space, and weight produced driving energy; leading to the marvelous windup clockwork mechanisms of the 18th Century. A new prime mover of miniaturization had entered the world stage as the wealthy, courtly and highly placed had the beginnings of time on their hands, both literally and figuratively. They sought



All three Jacquet-Droz androids are on exhibit at the Art and History Museum in Neuchatel, Switzerland. His masterpiece, THE MUSICIAN, (known as "Marianne"), center, can play five different tunes on the miniature organ. Date 1774. Courtesy Musee d'Art et d'Historie, Neuchatel, Switzerland.

entertainment and amusement. Simulations of life and articulated automatons had at last reached a Golden Age.

It was the clockmakers that built the first of the new mechanical entertainments for they were on the cutting edge of the new technology of controlled motion. It is said that John Mueller of Nuremberg made a mechanical eagle that greeted an emperor at the city gates and then flew back to its master as well as an iron fly that buzzed a ballroom and returned to Mueller's hand, fanciful tales at best.[3] In 1738, a mechanical flute player, its fingers opening and closing on the holes, was displayed by a Frenchman named Jacques de Vaucanson, who later showed off a model of a working shepherd who played a pipe in his left hand while he beat a miniature drum with his right.[4] His masterpiece, and the most celebrated marvel in this age of artful simulations, was de Vaucanson's "...artificial duck, which could imitate many of the functions, such as eating, drinking and quacking," driven by a clockwork mechanism.[5] de Vaucanson challenged the much later American political adage by suggesting that even though something looked like a duck, acted like a duck and even quacked like a duck, it wasn't necessarily a duck. The simulation was uncanny in its completeness; "The metal duck realistically imitated the activities of the genuine article - - swimming, smoothing his feathers, and eating kernels of corn. With the fantasy that distinguishes genius from mere ability de Vaucanson even gave his mechanical bird the power to excrete realistic duck droppings."[6]

The advanced work of de Vaucanson in France led, through inspiration, to the most marvelous clockwork simulations to survive the centuries. They can be seen in the local Museum of Art and History in Neuchatel, Switzerland. Their creator was a Swiss clockmaker named Pierre Jacquet-Droz who, with his two sons Henri–Louis Jacquet–Droz and Jean–Frederic Leschot, the latter adopted, created and hand built a series of three working miniaturized simulations between 1768 and 1774.[7] Called androids, or artificial humans (it would be in the 20th century before the harsh word robot replaced the earlier more aesthetic name), they dazzled Europe as their makers toured the continent giving public and courtly paid admission demonstrations while promoting the ability of Swiss watchmakers to produce luxury products. The first, and most complex, was THE WRITER named "Charles", a small boyish figure that could hand write up to forty characters, programmed on an embossed metal memory disc that controlled a pre-wound clockwork mechanism. The equally juvenile appearing THE ARTIST, named "Henri", was mechanically programmed to freely draw four sketches with a pencil, and seemed to blow away the excess graphite dust fol-

lowing a head tilt after the completing of a drawing. The third figure was their crowning glory. Larger, more adult, was THE MUSICIAN, named "Marianne" after widower Jacquet-Droz's dead wife. THE MUSICIAN plays five distinct tunes on a miniature pipe organ, actually keyed by her moving fingers, after which the figure nods in appreciation of applause and seemingly takes a deep breath. The French Revolution of 1789 ended the tours and had a disastrous influence of the Swiss watchmaking industry. Upscale goods lost their market, and the Jacquet-Droz androids were sold to raise cash. For a hundred years they traded owners, miraculously surviving the century of European upheaval, until they were purchased from their German owners by a fund raising committee and returned to Switzerland in 1909.

While the miniaturized simulations of life forms charmed the industrializing western world, it was the lifesize figures and their remarkable capabilities — albeit often faked — that both amazed an increasingly interested population and paved the way for the pay to play automatons to come. The late 18th Century and early to middle 19th Century provided dozens of examples, a number of which became legendary. The most famous among them was the TERRIBLE TURK, a chess playing automaton created in Vienna by Hungarian Baron Wolfgang Von Kempelen in 1769. The selection of the turbaned figure of a Turk by a Hungarian was rooted in both national pride and the European penchant for regarding anything related to the Ottoman Empire with awe and and air of mystery. By the early 16th Century the forces of Suleiman I "The Magnificent" had entered the underbelly of Europe by way of Belgrade. In 1540 the victorious Turkish army had taken the city of Buda on the Danube River, and the fanned out across the great plain of Hungary, subjugating the entire country to Turkish control and taxation. It was a nation shamed, barely holding the line on the border of a terrified central Europe. Reaching as far west as Vienna in a series of sieges, the Turks soon wore their power thin in assaults against Italy, Spain, all of Arabia, Persia, Russia, northwest India and north Africa. With the death of Suleiman I in 1566 the power of the Ottoman Empire began to slowly decline. As the 17th Century began fighting was underway in Hungary and Austria, but the Turks held, surviving in Europe for another century. The last great effort was the brutal Turkish siege of Vienna in the summer of 1683, with the Austrian line holding. The Austrians and Hungarians retook Budapest in 1686, and regained control over their lands at the Treaty of Karlowitz on January 16, 1699. This victory over the Turk was deeply ingrained in Hungarian nationalism and became a recurring theme in the nation's folk arts. Thus, when the Turks and the Russians were at war again, 60 years later, the latter under Catherine the Great (who later had American revolutionary naval hero John Paul Jones run her navy) and while Europeans once again watched in fascination, Von Kempelen picked a figure of the scourge of Europe as his wily chess player.

And wily the machine was, for no one seemed to be able to beat it. In a typical demonstration "The automaton had to be wound up and then actually picked up a piece and placed it. If his adversary made a wrong move (moving a Bishop as though it were a Rook for instance) he would replace it and the turn would be forfeit. When he checked he nodded his head three times. It was also significant that pieces had to be faced central in their square where there was probably a magnetic disc. After playing a game the automaton would perform tricks, taking a knight on any square chosen by the audience and proceeding to move it all around the 64 squares without touching any one a second time. (checked by placing a counter as each one landed upon). Finally he would reply to the crowd's questions by assembling little block letters of the alphabet on a special tray to spell out answers."[8] The wonderment of the watchers was real, for they had seen the inside of the machine before it started to play. Before every demonstration, the front doors of the cabinet table at which the TERRIBLE TURK sat were opened wide to reveal the levers, gears, bellows and other mechanical parts that seemingly made the machine work. But once these doors were closed, the magic took over. "But it was noticed that sometimes if a game were very short, the model was wound up just as many times as when the game was long and it began to be whispered that, perhaps after all the works served to conceal a hidden player."[9] And that was precisely what was happening. Once the supposedly revealing cabinet doors were closed an accomplice was shoe horned into the base, playing the chess game upside down and backwards and following the moves by flags attached to iron pellets that followed the magnetic bases of their corresponding chess pieces above. Von Kempelen took the secret to his grave in 1804, with the device ending up in Maelzel's London Exhibition, a forerunner of the Penny Arcade. In London the TERRIBLE TURK didn't win as often – obviously Maelzel couldn't find an upside down player as accomplished as Von Kempelen's assistant — and the machine ultimately lost its audience. With that the elaborate hoax was sold to the Chinese Museum in Philadelphia, an American arcade forerunner, where it was ultimately destroyed by flames when the commercial museum burned in 1854.

Other lifelike simulations, including numerous "Talking Heads", found a brief vogue in the 19th Century. Baron Von Kempelen made one to compete in a Russian competition asking for a "talking machine" that could pronounce all the vowels, a 1779 event sponsored by the Imperial Academy of Science in St. Petersburg that led to a later Soviet claim to the invention of the phonograph. The most famous of the latter machines was an advanced development of Von Kempelen's idea created by a retired astronomer who had been posted to the observatory in Vienna. Professor Faber was showing his talking machine in England in the 1830s " ... at the Egyptian Hall, London ... called THE EUPHONIA. It was an instrument something like an organ which by means of bellows, pipes, pedals and keys imitated the human voice."[10] Faber's expertise in handling the machine, hidden behind a curtain while the mechanical voice seemingly spoke through the head of a mysterious young woman, obviously had much to do with the emotional impact of the device. The American showman, P.T. Barnum, paid dearly for the THE EUPHONIA after Faber's death, bringing it to his American Museum in New York City in 1853, the year that England's premier engineer of the industrial age, Isambard Kingdom Brunel, began construction of the GREAT EASTERN. But without the Old Master at the controls THE EUPHONIA was not much more than a mechanical curiosity and hardly paid for its acquisition cost. Barnum, who had said "There's a sucker born every minute," had been taken.

Less than two decades later, the former cabin boy Henry Davidson was working on his CHIMNEY SWEEP exhibition machine, avoiding the pitfalls of the past and adopting the prime movers of the future. As a stand alone machine, CHIMNEY SWEEP didn't need an operator or a fuel. Once wound — for real, and not faked like the TERRIBLE TURK — all his machine needed to make it work was something to trip the clockwork mechanism. It was here that Davidson had his breakthrough idea. The purpose of the CHIMNEY SWEEP was twofold; to entertain its audience and make money for its owner. That meant that money had to be involved, yet there was no one around to collect it. Unless the machine itself...

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[1] "Tells of Inventing Slot Machine," *The New York Times,* Wednesday, June 8, 1927.

[2] *Ibid.*

3 "Coin Operated Machines Through the Ages," *Automatic Age*, January, 1938.

[4] *Ibid.*

[5] "First Automaton Built Around 400 B.C.," *Automatic Age*, April, 1937.

[6] James Hansen, "The Clockmaker's Androids," *Science 82,* July/August, 1982.

[7] *Ibid.*

[8] Mary Hiller, *Automata & Mechanical Toys,* Jupiter Books (London) Limited, London, England, 1976.

[9] "Coin Operated Machines Through the Ages", *Automatic Age*, January 1938.

[10] *Ibid.*

RULE BRITANNIA

The idea of using a coin to release a machine and permit access to a product or a service while retaining a payment in cash wasn't a new one. Patents had been taken out in Great Britain and the United States by the 1850s for tobacco boxes that allowed a smoker to fill a pipe for a penny. The new postage stamps, a British contribution to expanded public communication in the late 1840s, found a solution to remote sales in an 1857 stamp vendor that cut off the stamps with a sharp knife blade — stamps were not yet perforated — for a penny. Yet these devices were meant to serve rather than entertain, earning only modest returns for their vending functions. They weren't money makers. Davidson's machine, on the other hand, was a wholly new idea akin to prostitution: you sell the action but you keep the the machine to sell it again. The coin operated arcade, or amusement, machine was born and accepted the heritage of the world's oldest profession. Yet even though he received the acclamation of his peers for a new invention, Davidson wasn't actually first. He had been beaten to the punch only four years earlier by another Britisher, J. Parkes, who received a patent on his fortune telling penny-in-the-slot MECHANICAL ORACLE on February 16, 1867. "The questions were marked on disks, which were inserted in a slot," much like the floppy disks of computers well over a century later. "A disk slid down a runway over a series of holes until it reached a hole slightly larger than itself. It then fell through and released an appropriate answer" in the form of a pre-printed ticket. "The disks were of different diameters, and so each one released a different answer."[11] The problem was that Parkes didn't promote his machine, whereas Davidson immediately booked his devices into every agricultural and industrial fair that came his way. At the very beginning the marriage of machine and merchandising was forged, to remain the key to arcade machine success for another century or more.

Davidson's highly visible fair-based moneymaking simulations quickly spawned imitators, yet in replication the would-be copiers took quantum leaps in development and added much to the art of coin machines. The most notable and enduring were the wide variety of exhibition machines made by John Dennison of Leeds, England, a mechanic turned coin machine maker and and operator who exhibited his first constructions at the Yorkshire Exhibition in May, 1875 and continued to make his arcade attractions well into the 20th Century with his daughters Alice and Evelyn carrying on the business for another twenty years after his death in 1924. His first 1875 machines, operated by a British penny, were a sensation, even though buried among the hundreds of exhibits in the "Operatives Department" of the Machinery Department at the annual Yorkshire Exhibition. Listed in the fair catalog as made by "Dennison J., 30, Salop Street, Bank," the local paper described them as "well-executed models of drilling machines (96) and of hand lathe (97)... shown by J. Dennison," with the catalog numbers indicated.[12] John Dennison, not above self promotion, and keenly attuned to the need for the dual powers of machines and merchandising to put his devices over, unabashedly changed the copy and its running date when he reprinted the statement on the inside promotional paper of his later machines, stating "The models of a drilling machine and hand lathe, exhibited by Mr. J. Dennison, 26, Salop Street, Bank, are exceedingly well executed. (Prize awarded.) Leeds Mercury, May 1st, 1875," a patently incorrect date as the fair didn't open until May 13th.[13] This inside machine paper also outlined the extent of his operations, stating that the Dennison "Ingenious A1 Mechanical Working Models," as he called them, were "Exhibited at Leeds, Wakefield, Bradford, Dewsbury, and Haddersfield Exhibitions, Bazaars, & c with great success and satisfaction to the committees."[14] By 1882 John Dennison had almost single handedly created a national acceptance for a new form of amusement across north England, that of the coin-operated exhibition machine, in later years to find its place as a basic format within a class of devices known generically as arcade machines. Students of his craft followed the style of the master religiously, foremost among them the house of Canova and Thompson, a partnership of William T. Thompson, a brass foundry pattern maker of Birm-



The John Dennison MUSICAL FAIRY fortune teller of 1885. Once a coin is dropped the doll figure raises her hand and shutters behind the fairy at left open to reveal the fortune. Nic Costa Collection.

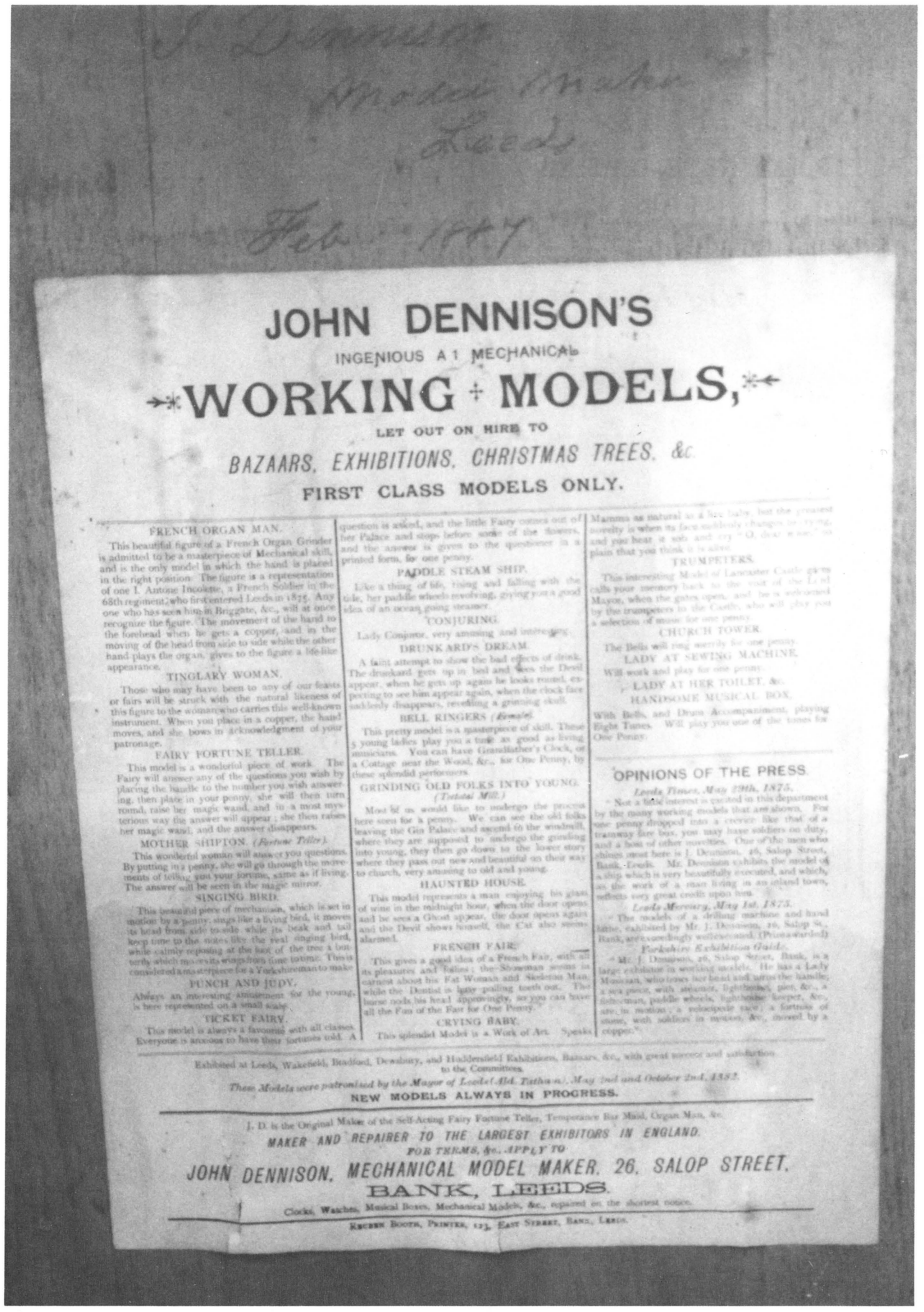


The Dennison SORCERER FORTUNE TELLER of 1887 delivers a printed fortune direct to the paying customer. Front has been removed to reveal coin trip, right; clockwork mechanism, left; and delivery chute, center. Nic Costa Collection.

ingham, England, and Vincent Canova, already experienced in the traveling show and exhibition circuit as an animated figure maker and exhibitor. Producing a number of mechanical exhibition machines after their 1897 startup, Canova and Thompson were soon concentrating on more sophisticated mechanical coin-op devices including a peep show called the CANOVASCOPE and a two player competitive race game for English pubs called the AUTOMATIC CYCLE RACER. With the change in direction not completely to Canova's liking, in 1904 the team amicably split up, with Vincent Canova remaining in Birmingham with his own Canova Model Company, where he continued to produce working models — generally of a macabre nature — into the second decade of the 20th Century, starting with LIMEHOUSE NIGHTS, a tableau of dope addiction. The development and placement of elaborate coin–operated exhibition machines of social and supernatural subject matter remained a British franchise and an idea not picked up in the Americas.

The British turn toward income production came in 1885 with a dramatic change in coin machine location placement. Whereas the exhibition models of the past had dazzled and delighted young and old alike, male and female, at exhibitions, fairs, and bazaars across the land, and would so for decades to come, such placement was not exactly conducive to a steady income. The throngs were erratic and, more often than not, a summertime thing. Moreover, the exhibition devices weren't usually patented as each one was hand made and unique. To really make money for their makers the new coin machines would have to provide the exclusive earning potential of patent protected devices placed in high density, highly charged and high roller locations with year-round earnings capability. There was only one location that fit the mold. The rise of industrialization had made it more than a village meeting ground, and urbanization had increased the site population by multiples. Games, amusements, competitive athletics and betting were rife, as were a willingness to spend money. The British public bar, or pub, was about to be transformed by the new wonder of the industrial age, and the coin machine found a new and enduring home.

The pub machines differed from their exhibition forebears in what they offered for their money. Increasingly, it was direct involvement. Where the working models showed a silent depiction of an event the new pub machines became an event unto themselves. Patrons of the bar were able to demonstrate strength, skills and other forms of superiority to their peers, with losers buying the drinks. The first of these marvelous athletic apparatus, soon to be copied on both sides of the Atlantic, was the TRY YOUR STRENGTH



John Dennison pasted an information sheet on the back of his "Working Models," listing all machines and their actions. This is on the back of the SOCERER FORTUNE TELLER. Pencil writing on the cabinet wood above printed sheet dates the machine at February 1887. Nic Costa Collection.

machine made by Londoner Robert W. Page in 1885. Forerunner of a myriad of models to come for another 60 years or more, the Page device was a massive floor-based machine that picked up the elements of an existing pub game called the athletic lifter. What Page did was enclose the registering dial in a high security cabinet that included a coin freed mechanism. In his patent application Page outlined the workings of his device in a pattern that would soon be followed by literally hundreds of coin machines to come: "By this construction of machine, if a person desire to test his lifting-power, a coin or token of predetermined value or size must by passed through the slit and will fall into the bucket, where it will remain until the handles be lifted by the said person, this being done in the manner usual when using an ordinary lifting machine for testing strength. The spring will by this means be compressed to a certain extent, according to the force or power exerted, and the piston will be raised to a corresponding degree. This extent of movement will be communicated by the cord and grooved wheel to the bar on arbor. The bucket, by the weight of the coin therein, will at the same time descend, and the finger or catch on arbor will be rotated by the quadrant and pinion, its extent of rotation being limited by the bar, and the power exerted by the person using the machine will be thereby indicated by the index and loose marking hand or pointer on the dial. Upon the person releasing the handles the piston will resume its normal position and the bar as it is carried back by the cord and grooved wheel will carry with it the finger or catch and index and the bucket will be thereby raised, the bottom of the bucket will be fully opened by the finger or catch coming against the pins... and the coin will be discharged into the drawer. If a smaller coin or token than that predetermined should be dropped through the slit it would simply pass through the opening in the chute into the drawer without operating the mechanism, and the slit is of course of such a size as well not admit of the introduction of a larger coin than that required."[15]

Never mind that the action was tenuous rather than positive, that the weight of the coin rather than its usage as a mechanical block to effectively move a mechanism released the device, or even that major metal and indexing components were moved by a cord. All of these delicate mechanical drivers would take over a decade to eliminate, to be replaced by more durable and dependable forces. The fact is Page's TRY YOUR STRENGTH machine worked, and by coin, and as such was a phenomenal device for its day and age. It stands as the forerunner of the modern international arcade machine business. It also stood as the machine to best in its own day, as its earning power was prodigious. Page even made a second model counterweighted to reduce the scores — score inflation was a coin machine problem from the very beginning — and quickly took every step he could to protect his monopoly on the device. Less than a year after he had put his two TRY YOUR STRENGTH models on the market, in October 1885, he patented his process in France and Belgium, and in the following year in Spain, India, Tasmania, South Australia, Italy, Austria, and Hungary, Mau-

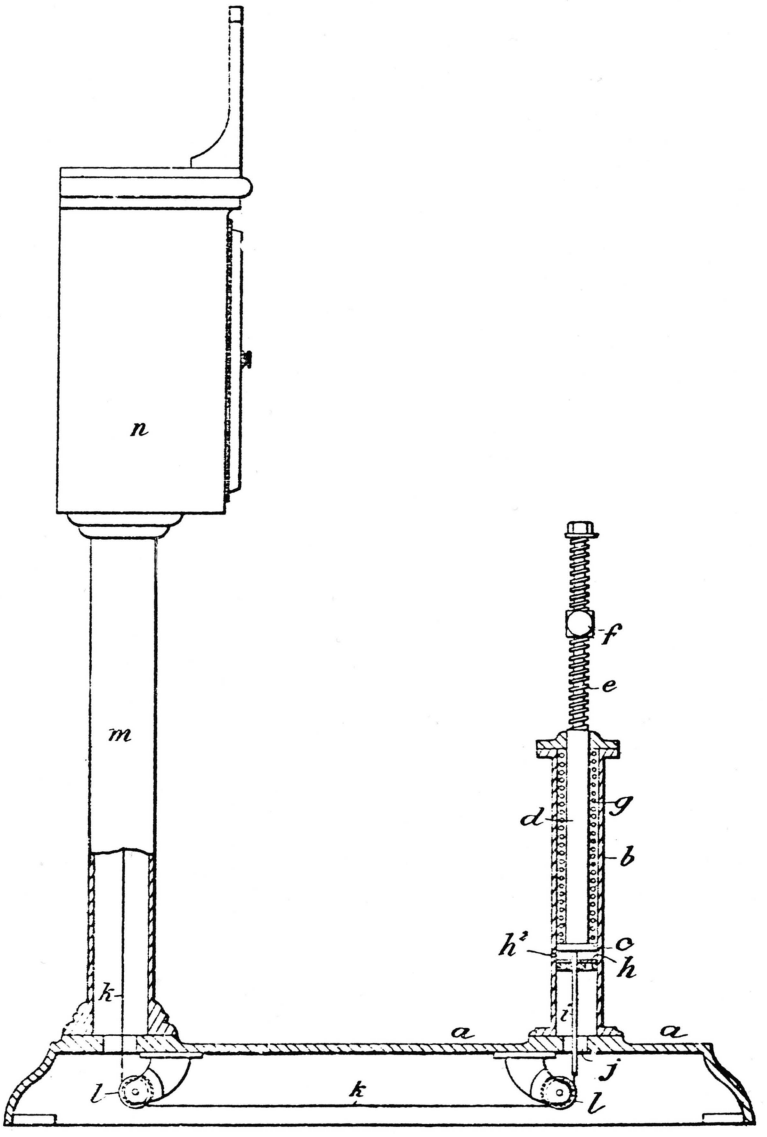
(No Model.) 7 Sheets—Sheet 1.

R. W. PAGE.

COIN OPERATED STRENGTH TESTING MACHINE.

No. 373,942. Patented Nov. 29, 1887.

Fig. 1.



Witnesses
Will A. Norton
Wm. M. Terrell

Inventor
Robert W. Page
by John J. Halsted & Son
his Attys.

Above and next page: The first of the pub athletic coin-ops, and the machine that started an industry: the TRY YOUR STRENGTH made by Londoner Robert W. Page in October 1885. U.S. Patent Office.

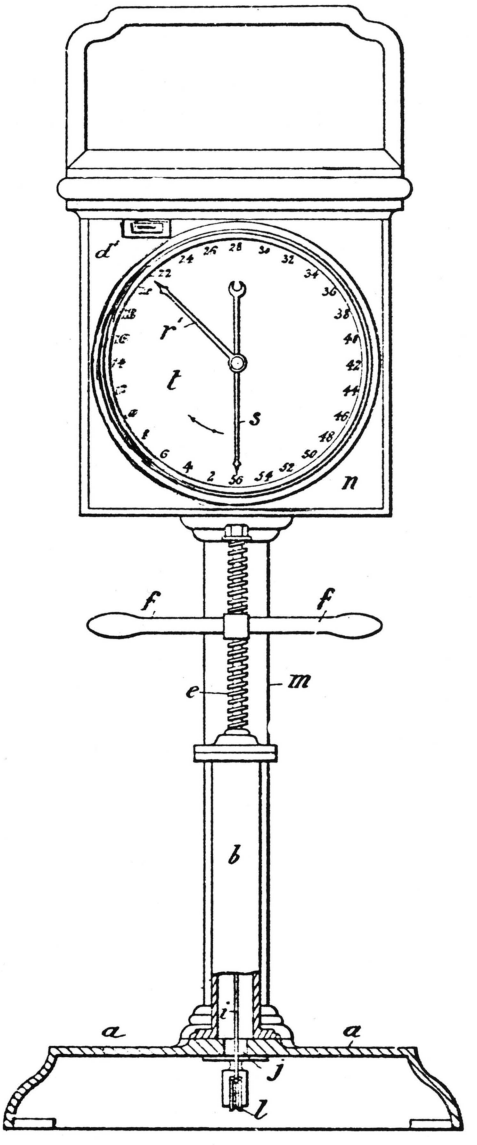
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R. W. PAGE.

COIN OPERATED STRENGTH TESTING MACHINE.

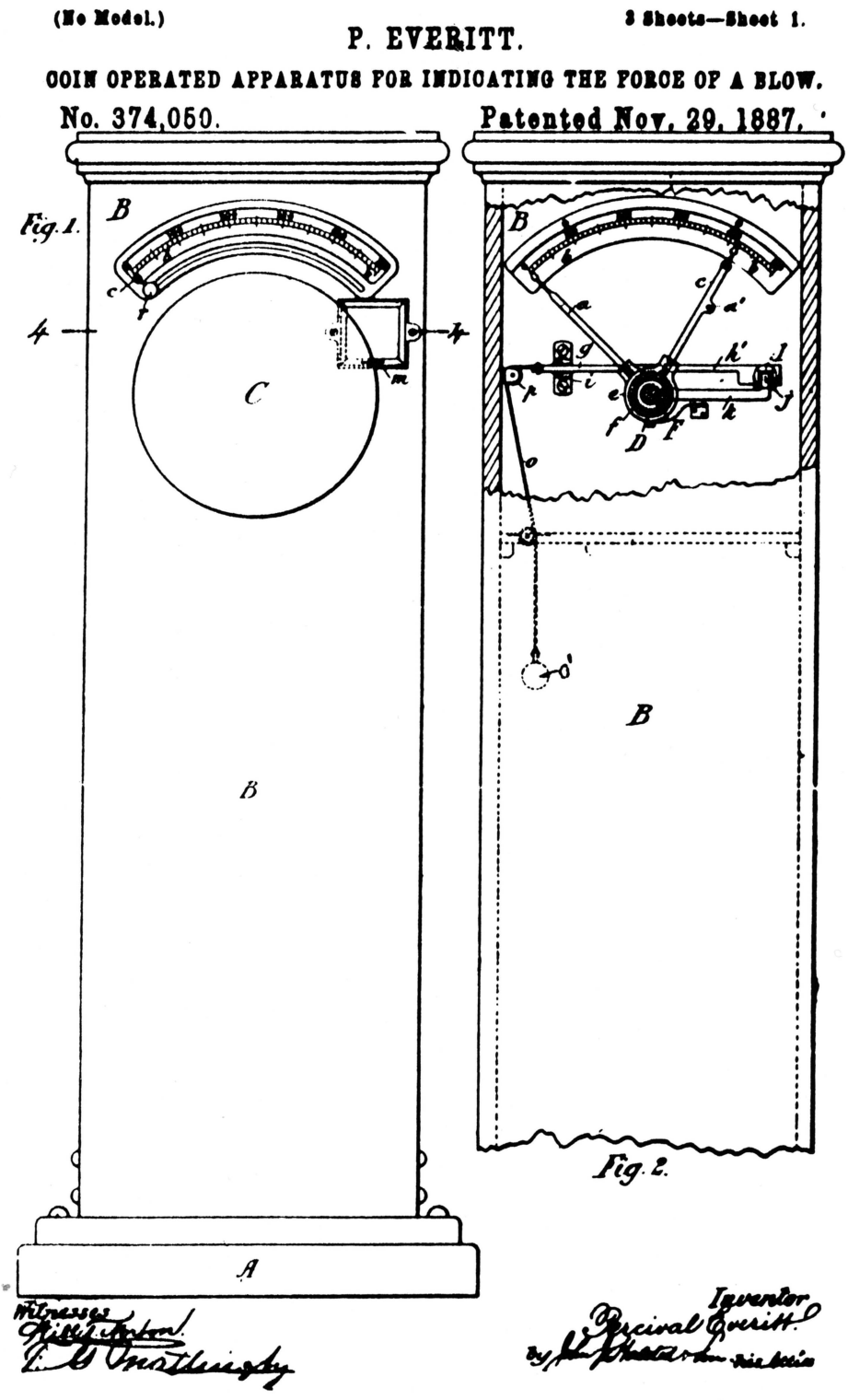
No. 373,942. Patented Nov. 29, 1887.

Fig. 2.



Witnesses
Wm. J. Morton
Wm. M. Terrell

Inventor
Robert W. Page
by John J. Halsted & Son
his Attys.



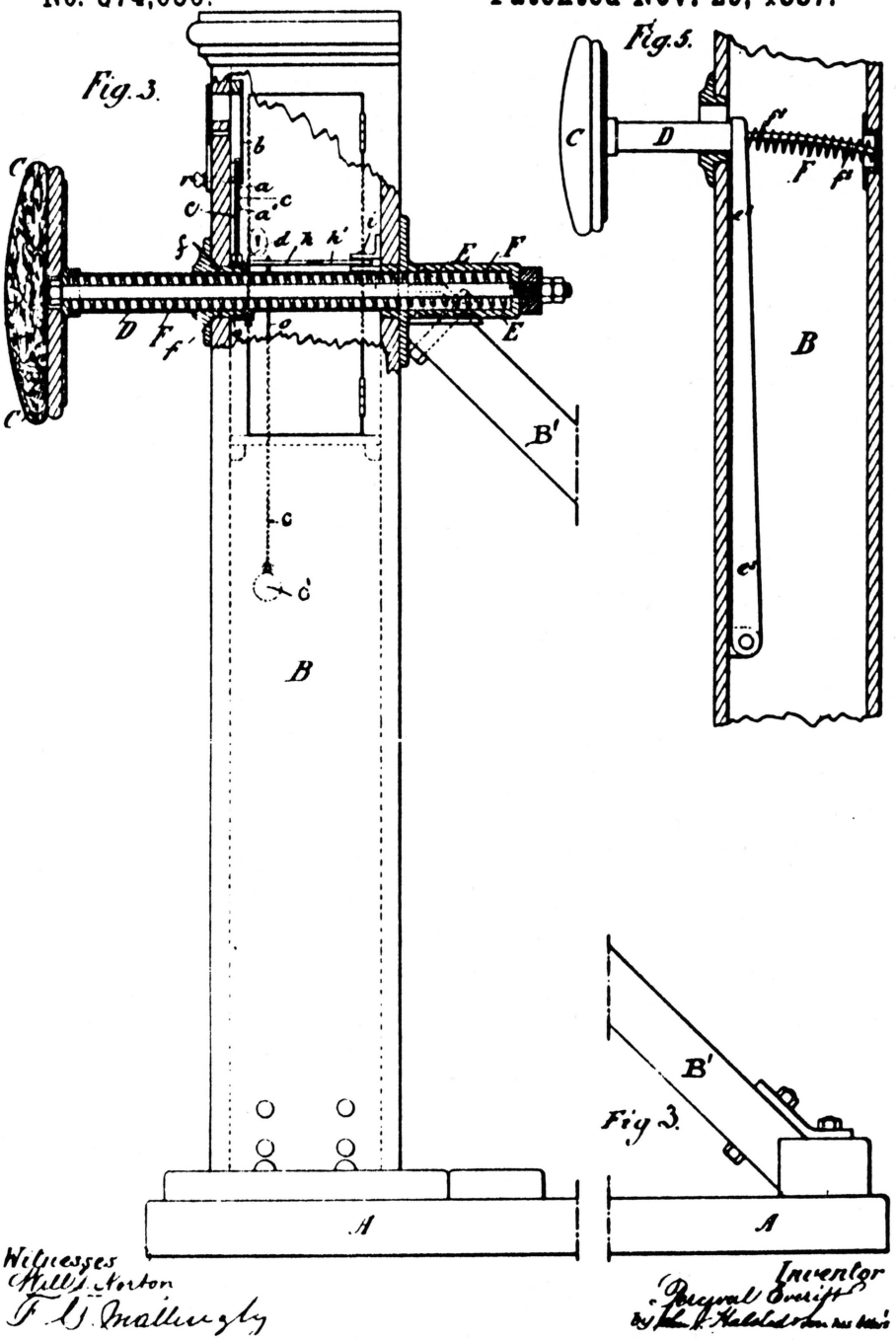
Above and next page: England's premier coin machine inventor, Londoner Percival Everitt, took up where Robert Page left off. This is Everitt's pub placement BLOW TESTER of June 1886. U.S. Patent Office.

(No Model.) 3 Sheets—Sheet 2.

P. EVERITT.

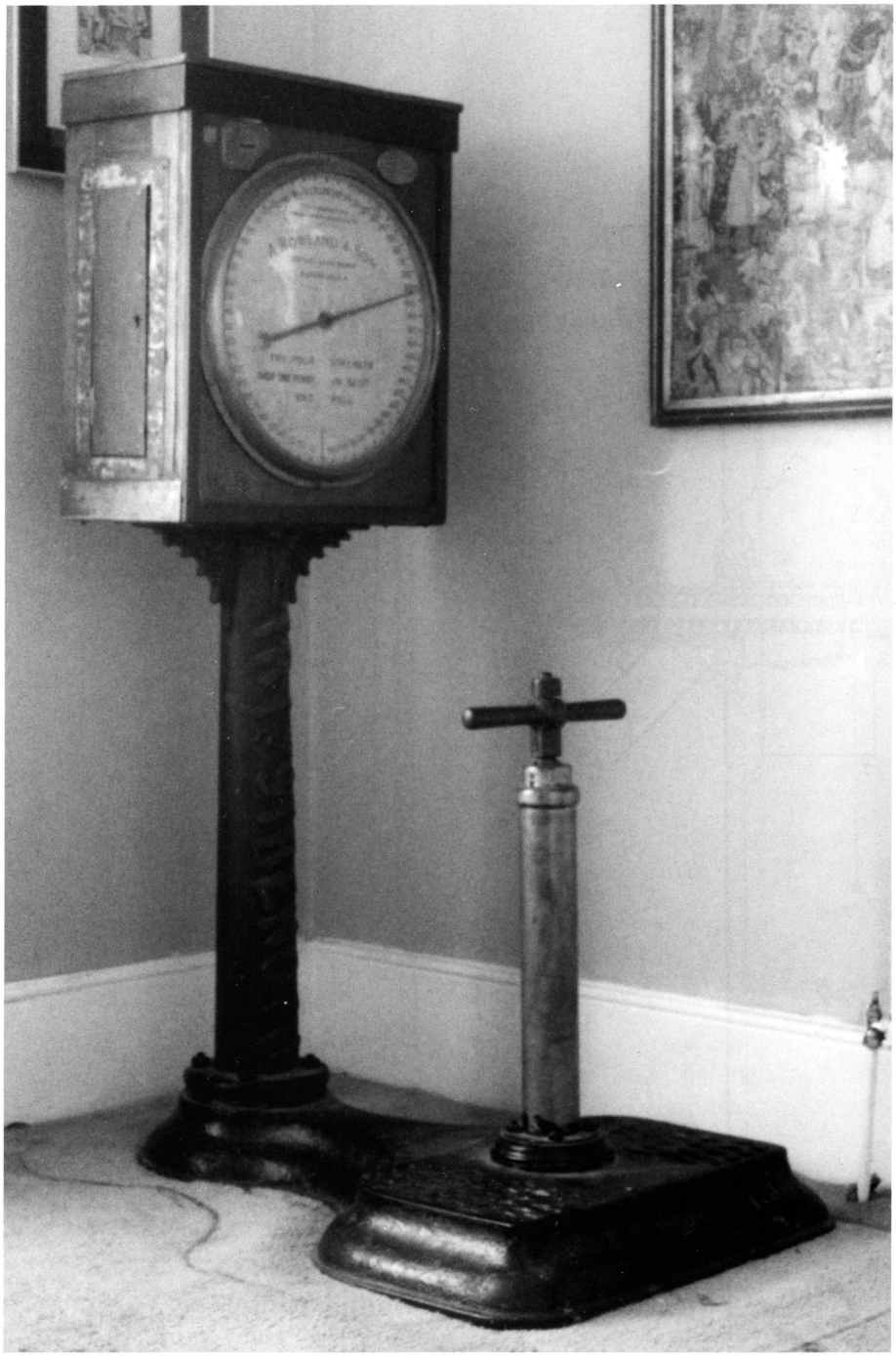
COIN OPERATED APPARATUS FOR INDICATING THE FORCE OF A BLOW.

No. 374,050. Patented Nov. 29, 1887.



Witnesses
Hills Norton
F. L. Mallery

Inventor
Percival Everitt
by [illegible]



The coin-operated amusement machine that started player involvement, the Page 1885 TRY YOUR STRENGTH was widely copied in Great Britain and the United States for another 60 years or more. Nic Costa Collection.

ritius, Victoria, New Zealand, Cape of Good Hope, Natal, New South Wales, Ceylon, and finally the United States, hoping to enjoy the fruits of his efforts. He did, to a degree, as surviving machines would indicate. But Page had also started an industry that, in a matter of months, crowded the field, making his franchise short lived.

What Page had done, and what others to follow would do, was add coin control to an existing pub entertainment. But only one. While weight lifters were popular in the pubs, so were a wide range of other devices from hand grips to muscle testers, padded punching tests, lifts, pulls, scales, blowing tests, picture exhibitions, and even the high tech application of electricity designed to shock when handles were gripped or pulled, the charge provided by a coil or battery. Page had shown what could be accomplished, and in a flash the rush was on. The breakaway year was 1886, a bellwether mark in Britain's industrialization. It was the first year that Britain's merchant shipping fleet had over half its tonnage under steam, and the year that *Das Kapital* by Karl Marx, becoming the communist manifesto, first appeared in print in English, ultimately taking over a century to debunk. Working completely independently, yet obviously aware of the work done by Londoners Robert Page and coin-operated scale inventor Percival Everitt, Thomas Cooper of Great Ryburgh in Norfolk created the first Peep Show. His AUTOMATIC EXHIBITOR was simplicity itself, with a levered paddle lifting a single picture – ranging from a nude photograph to pub artwork or a funny saying – into a viewing chamber once the proper denomination coin was dropped. Viewing was through two eye ports and lighting was ambient through a window at the top, suggesting poor viewing in dark pubs or on cloudy days, the latter often the case in foggy England. It was in its extended usage that its connections with other coin controlled work in Great Britain was revealed. In Cooper's April 13, 1886 British patent he covers other claims, stating "It will be evident that my described invention may be so connected with weighing machines and testing machines – such, for example, as those commonly seen at fairs for asserting the force of a blow – as to display or disclose the result of the weighing, testing, etc. In this case the indicator of the apparatus would be within the show case and only visible for a certain limited period after a coin had been placed in the said apparatus."[16] One year earlier coin-operated amusement machines were non-existent, yet here is Cooper relating his pictorial display to a whole class of coin-ops. The coin machines had captured the British public's imagination, and would from that day forward.

Such popularity could not be denied. Within months, Britain's dean of coin operated entrepreneurs and inventors, Londoner Percival Everitt, entered the field of amusement machines, bringing a validation to the genre that solidly assured its future success. Everitt was an inveterate inventor, applying his mind and extensive mechanical skills to a brilliant array of

ideas and devices. Here was a man who would lavish as much care and attention of the development of clip-on ice skates, an 1881 invention, as on the creation of the world's first coin-operated weighing scale, an 1884 development that led to substantial business ventures in both Great Britain and the Untied States. Everitt had just entered his prime as England's premier coin machine inventor when the opening shots of an amusement machine boomlet hit. Single handedly, Percival Everitt converted the blip into a full blown boom that has never ended. In a frenzy of development Everitt seemingly rushed into the opening to create coin-op versions of every possible pub entertainment he could find. By June 1886, only nine months after Robert Page's strength test machine, Everitt had created two versions of the old padded-pad pub punch tester in standing floor cabinet models that permitted scoring once an English penny was played. Everitt's BLOW TESTER found instant pub placement as a puncher, whereas the STRIKE TESTER model, where the scoring blow was made by a mallet, was more popular for fairs and expositions. By December, before the year was out, Everitt created his MUSCLE TESTER, an advanced development of Page's machine of the year before. Everitt took the same idea (it even looked a lot like the Page machine) but put the pull arms in a horizontal rather than vertical position, providing a seat for the pulling player. Everitt had created the first sit-down arcade machine a century before the format found its full popularity. In his December 3, 1886 British patent Everitt not only described his machine, but also added a paean to Page's original model: "This invention relates to the construction of a machine adapted for testing the muscular power exerted by a person in the act of pulling in a horizontal or nearly horizontal position, the object of the invention being to provide a machine which will allow of bringing into play muscles which cannot be brought into play by the use of known machines. For this purpose, I provide a seat, which may advantageously be a sliding seat — such as is used in rowing boats — in connection with a foot rest which may be adjustable. The handle or handles of the machine...are arranged in the line of the draft, so as to allow...a direct pull. these handles...are suitable connected by means of rods, levers or otherwise to a spring or weight, which forms the resistance, the said handles being also connected to an indicating apparatus...whereby the indication of the power exerted is only disclosed on the application of a coin to token to be placed in the apparatus, in a manner similar to that described in the specification of R. W. Page's application"[17] Sensing both Commonwealth and world sales as Page did, Percival Everitt patented his BLOW TESTER and MUSCLE TESTER in Great Britain, Belgium, Italy and Victoria; got a BLOW TESTER patent in France and a MUSCLE TESTER patent in Germany; and applied for U.S. patents on both machines on February 2, 1887. Riding a wave of coin operated pub machine acceptance, Everitt soon produced bartop and floor cabinet ELECTRIC SHOCK TESTER machines in February 1888 as well as the preeminent countertop hand GRIP TESTER by the fall of the same year. No British coin machine maker before (and few have since) had matched Everitt's broad line of amusement devices. Other Britishers challenged Everitt's leadership position in the new industry, notably William S. Oliver and Joseph Mason, the latter making exhibition machines as early as 1886, and a shocker in 1889, but Everitt's prolific productivity soon eclipsed their efforts.

While Percival Everitt generally led the pack in machine development, his ELECTRIC SHOCK TESTER actually came after three earlier and highly successful developments. The first coin–operated shocker was fabricated in the summer of 1886 by a Londoner who took a carnival attraction and brought it indoors. Norman W. Russ, who apparently only had a brief fling with fame, completed the circuit on his floor standing pub location NEW SHOCK MACHINE by having his patron stand on charged plates while gripping activated handles, providing enough shock to send a tingle throughout their entire body. The operating coin was once again the sturdy British penny. That same summer, William S. Oliver of London, the only peer that even faintly approached Percival Everitt's role as the Father of British (and the world's, for that matter) coin machines, created a shocker called the AUTOMATIC BATTERY for production by London's Daniel Judson & Son, Ltd. A year later Oliver invented a shocker that spoke. Oliver's TALKING ELECTRIC BATTERY of 1887 had the innards of a phonograph and, when activated by a coin, administered a shock and told you how much voltage you received. And it was not negligible. While the current generated by a wet plate battery may not have been high, by the time it was stepped up by an induction coil, shocks in the 50 volt range on upwards were not uncommon. By the time Everitt made his shockers in 1888, the coin-operated pub shocker was becoming a standard amusement fixture.

The same was becoming true for one of the most fascinating coin machine formats ever created, that of the fortune teller. The idea was a natural for the coin machine. The curious as well as the superstitious, not to mention the frivolous and impressionistic, were always willing if not eager to wager a coin against a look into their future. Acceptance of an occult science on the part of a gullible minority, as well as a more general belief in the ability of others to predict a personal future, led to a whole family of fortune tellers that were operated by a coin, dispensing their questionable information by sign, rolled printed papers or, as created early in the coin-op era, by the spoken voice. The spooky nature of the latter was an early entry in British coin machines "...when in 1889 H. Englefred patented a fortune-telling apparatus in which on dropping a penny into a slot, answers were given audibly by phonographic means. By this time coin machines were common."[18]

An equally sophisticated fortune telling device, the GYPSY FORTUNE TELLER first produced by the Vulcan Engine Works in the summer of 1888, captured the mass market from the pubs to shops and seaside resorts. It's inventor was a Middlesbrough industrial consultant who operated his own boiler engineering and fabricating plant on Vulcan Street east of the seaport city, learning his trade and his business acumen as an employee of his namesake father's Anthony Harris and Company, ship owners and iron, coal and coke merchants.[19] The younger Anthony Harris began experimenting with coin machines at the end of 1887, attracting others to his avocation, one of the most remarkable being the first recorded female inventor in the field of coin machines (with numerous others to follow in later years on both sides of the Atlantic). Helen Alicia Burt came from London, a full day's train ride from far

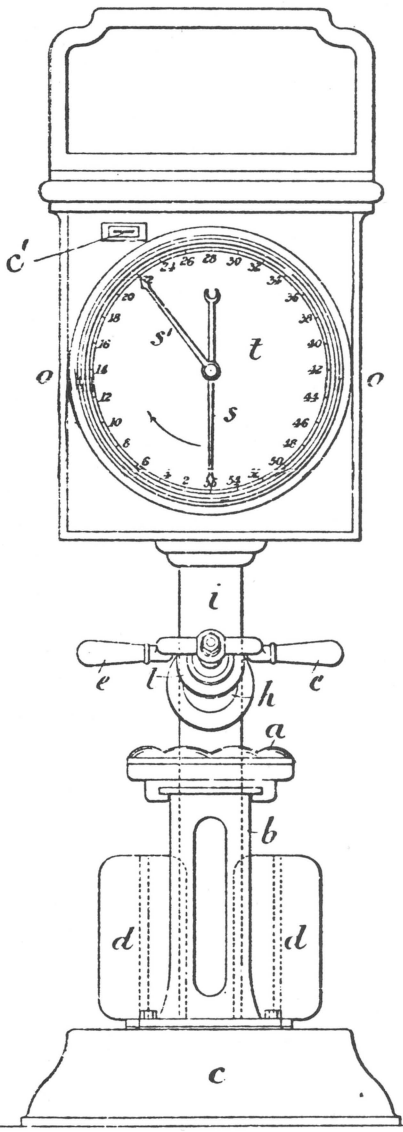
(No Model.) 5 Sheets—Sheet 1.

P. EVERITT.

COIN OPERATED MACHINE FOR TESTING MUSCULAR POWER.

No. 374,049. Patented Nov. 29, 1887.

Fig. 1.



Witnesses:
Will T. Norton
T. G. Mattingly

Inventor
Percival Everitt
by John J. Halsted & Son
his Attys.

Above and next page: In taking the Page TRY YOUR STRENGTH machine a few steps further, Percival Everitt's MUSCLE TESTER of December 1886 created the world's first sitdown arcade machine. U.S. Patent Office.

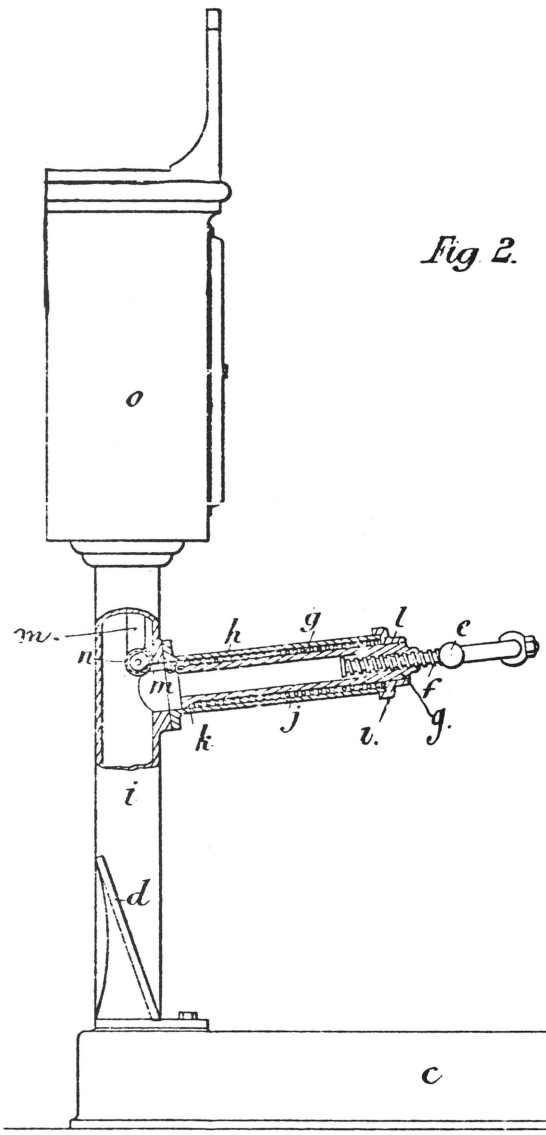
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P. EVERITT.

COIN OPERATED MACHINE FOR TESTING MUSCULAR POWER.

No. 374,049. Patented Nov. 29, 1887.

Fig 2.



Witnesses:
Hill & Norton
S. G. Whittemore

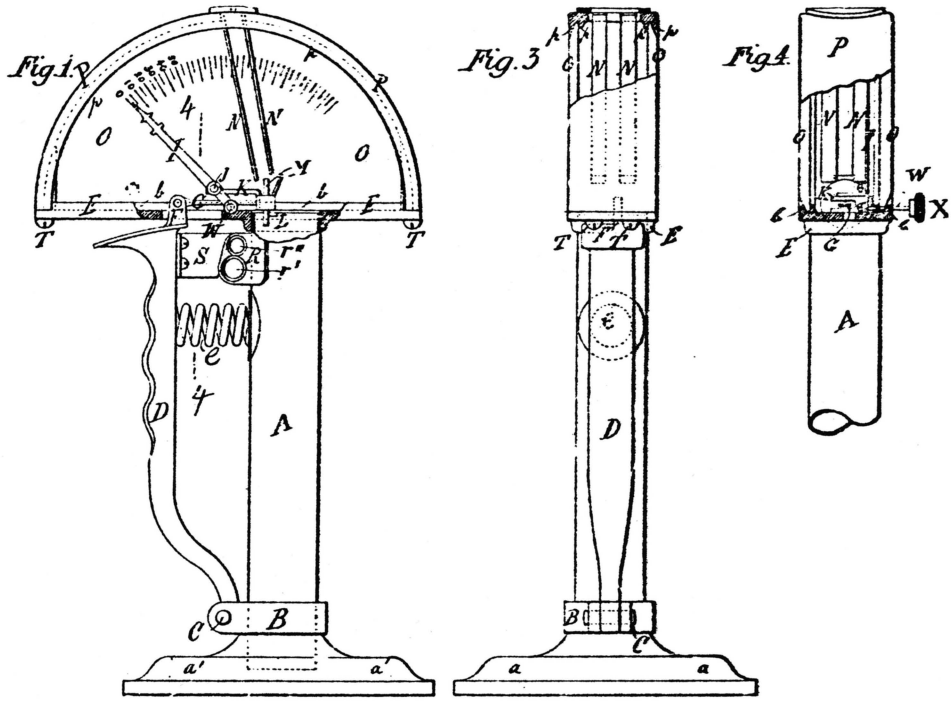
Inventor.
Percival Everitt
by John J. Halsted & Son
his Attys.

(No Model.)

P. EVERITT.

COIN OPERATED GRIP TESTING MACHINE.

No. 400,839. Patented Apr. 2, 1889.



WITNESSES:

Wm. A. Norton

G. M. Coplemeaver.

INVENTOR

Percival Everitt

BY John J. Halsted & Co.

his ATTORNEYS

Perhaps the most popular British coin-op of the 1880s, the Everitt bartop GRIP TESTER of September 1888 was copied broadly in England and America. He received an American Patent in April 1889. U.S. Patent Office.

away North England and Middlesbrough. Located as she was in the center of British coin machine development, Helen apparently preferred to work with Tony Harris, and in turn provided him with a coin chute, coin acceptor, fraud prevention and perpetrator identification system that was almost a hundred years ahead of its time. In her patent on the system dated May 19, 1888, which she assigned to Anthony Harris, she described its workings: "A coin of predetermined kind is inserted at the orifice and passes down the slides and hopper into the box. The handle is now pushed inward by the user and operates the machine. If an iron disk or the like be introduced into the machine, it is diverted by the magnet device and passing down the duct strikes the dash pan so that the user's photograph is taken by ...a very small camera, which is located behind a minute opening in the wall of the cabinet and about the height of the operator's face."[20] The system was too delicate to survive — a slap in the side of the cabinet, or even an involuntary bump, would knock the components out of sync — and Harris wisely avoided it. When he came back a month or so later with his countertop fortune teller he used a much simplified coin process that utilized a magnet and a pair of knife blades to detect the many iron slugs and lead disks then being produced by Britain's industrial workers.[21] With that Harris found himself in a new business, adding a format to the many popular amusement machines and breaking the bounds of pub placement. The GYPSY FORTUNE TELLER also pioneered a new form of machine appearance, that of a countertop cabinet with an indigenous coin slot and a play handle, a basic style that would quickly move into amusement, trade stimulator, vending and gambling machines alike. Coin machines were finding their markets, and establishing the appearances they would live with for generations to come.

The success of the GYPSY FORTUNE TELLER led to advanced developments. A year after its introduction Harris produced it in completely automatic as well as player activated models in both gambling and fortune telling modes, coin-op and non-coin. He described them in his patent: "In machines which are entirely automatic — that is, those in which the coin is the sole agency for operating the machine without any further assistance from the user — I prefer to employ electricity as the motive power and to bring it into play by the action of the coin. In machines which are intended to be only partly automatic I supplement the action of the coin by that of a push, pull or turn handle, or a foot-board or other equivalent device which is located on the exterior of the machine and is adapted to be operated by the user after the introduction of the specified coin into the machine. Where the machine is required to be non-automatic, I substitute the action of the coin for that of one of the above devices, which is adapted to be operated by the user or an attendant on paying the latter a specified amount."[22] In physically describing the GYPSY model, Harris called it "...a fortune telling machine ...with a fixed annular plate bearing the mottoes or devices ...and a freely-rotatable pointer."[23] The machine was soon being produced in volume by Harris at his own Anthony Harris And Company at 72 Lower Commercial Street in Middlesbrough, with exclusive marketing and promotional rights assigned to the Automatic Amusement Company of Gordon Grove, Camberweil S.E., in London, allowing Harris to concentrate on his next venture.

By the end of 1889 virtually all of the British developed pub machine formats to be used throughout the world for the next thirty years or more were in place, facing only refinements and improvements with the passage of time. What had been largely a British franchise up to that point soon jumped the borders of Europe and then took the quantum leap that would create a new center of attention and lead coin machines down a path of development far beyond the embryonic efforts of their initial inventors. By virtue of their origins the international language of coin machines was English. Starting in a land where any point is less than seventy miles from the ocean the new industrial art moved into a continent across the Atlantic Ocean that wasn't even fully explored and had thousands of miles of wilderness, not to mention hundreds of public and private amusement locations and tens of thousands of saloons. It was a land that by force of circumstance and luck also spoke English. The Old World of coin machines and the New had a common bond. They understood each other. And, even closer, they traded people. Seeking their elusive fame and hopefully their financial fortunes, a number of the British coin machine pioneers came to America. Included among the exodus was Percival Everitt, first in 1885, with Everitt later becoming a New Yorker, followed by Anthony Harris in 1891.

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[11] *Ibid.*

[12] "Yorkshire Exhibition," *Leeds Mercury,* May 15, 1875, Leeds, England, U.K.

[13] Inside machine paper, "John Dennison's Working Models," February, 1887. Nic Costa Collection, London, England, U.K.

[14] *Ibid.*

[15] Robert W. Page, of London, England, *Coin-Operated Strength-Testing Machine,* Patented in England October 20, 1885, No. 22,576. U.S. Patent Applied October 19, 1886, U.S. Patent No. 373,942, November 29, 1887.

[16] Thomas Cooper, of Great Ryburgh, County of Norfolk, England, *Automatic Exhibiting Apparatus,* patent in England April 13, 1886, No. 5,439. U. S. Patent Applied January 15, 1887; U.S. Patent No. 368,279, August 16, 1887.

[17] Percival Everitt, of London, England, *Coin-Operated Machine for Testing Muscular Power,* Patented in England December 3, 1886, No. 15,813. U.S. Patent Applied February 2, 1887; U.S. Patent No. 374,049, November 29, 1887.

[18] "Coin Operated Machines Through the Ages," *Automatic Age,* January, 1938.

[19] Data from directories and rate books, County Librarian, County Library, Middlesbrough, Cleveland, England, November 17, 1976.

[20] Helen Alicia Burt, of London, Assignor to Anthony Harris of Middlesbrough, England, *Coin Freed or Actuated Machine,* patented in England May 19, 1888, No. 7,427. U.S. Patent Applied May 5, 1891; U.S. Patent No. 471,808, March 29, 1892.

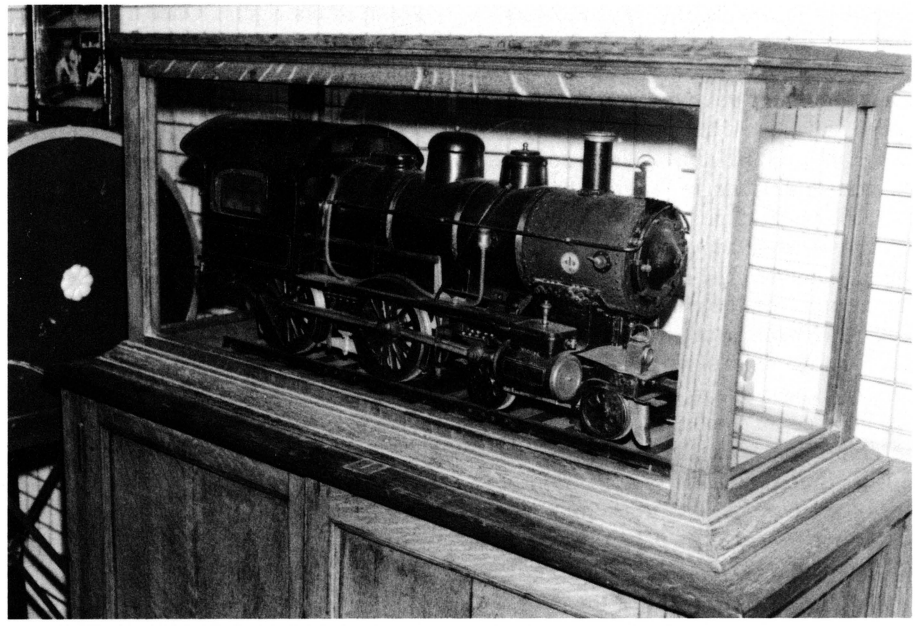
[21] Anthony Harris, of Middlesbrough, County of Cork, England, *Coin Freed or Actuated Machine,* patented in England June 4, 1888, No. 8,098. U.S. Patent Applied March 11, 1889; U.S. Patent No. 434,109, August 12, 1890.

[22] Anthony Harris, of Middlesbrough, England, *Appliance For Playing Games of Chance,* patent in England July 18, 1889, No. 11,480. U.S. Patent Applied Feb. 18, 1890; U.S. Patent No. 455,100, June 30, 1891.

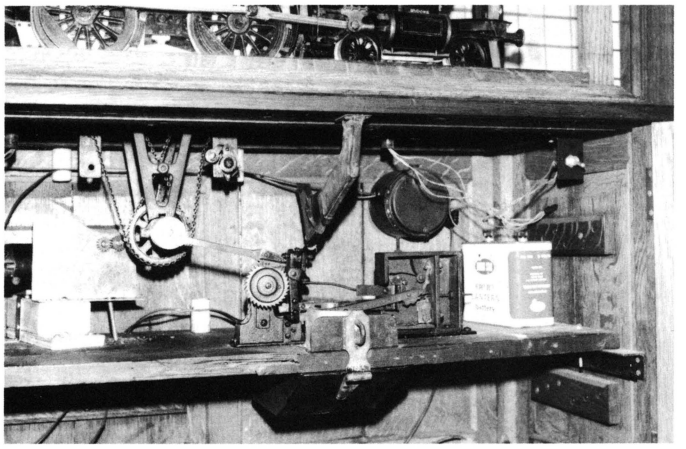
[23] *Ibid.*

NEW IDEAS IN A NEW WORLD

American coin machine development paralleled that of the British, only in its own way. It was the same, but different. Like their British cousins, the early coin-op inventors of the world's largest republic quickly embraced the idea of the play-for-play exhibition machine. But where the British were fascinated with boudoirs, tableaus of royalty and sinister events to be shown at agricultural fairs and annual expositions, the Americans were more taken with their new goods of science and engineering to be displayed wherever people gathered. At a time when the British eyed the American market for its profit potential, and even before they physically made the trip, the Americans were creating their own indigenous coin machine industry. Industry may be too grand a word, for it was a scruffy collection of independent machine makers at best, with no central location or guiding light, the latter situation making the market particularly appealing to the seasoned Britishers. So they came over in numbers. The idea of making one's fortune in the Americas was particularly appealing to the Brits as they felt they had the dual advantages of knowledge and experience, not to mention the fact there was no language barrier. And there was no limit to the growth potential in the new lands. The first of America's great social and business inventions — the telephone (invented by an Englishman, Alexander Graham Bell, born 30 years earlier in Edinburgh, who became an American citizen) in 1876; the phonograph (created by America's premier inventor, Thomas Alva Edison, whose great grandfather was a Tory Loyalist during the Revolutionary War, advocating the retention of British Royal rule) in 1877; the cash register (invented by Dayton, Ohio saloonkeeper James J. Ritty to keep his bartender's honest) in 1878; the incredible electric light (Edison again, as well as Sir Joseph Swan at Newcastle-upon-Tyne in England) in 1879; the typewriter (by Milwaukee, Wisconsin, inventor Christopher Latham Sholes, who sold the idea to the Remington Small Arms Company in Ilion, New York, a rifle maker) in 1874; the adding machine (mechanic William S. Burroughs of St. Louis called his device the ARITHMOMETER) in 1885; even the supermarket (the first "super" began operation in 1879, and the large American department stores followed apace) — were beginning to revolutionize the nation and the way people lived and did business. Other British inventions were beginning to reap fortunes in the United States, par-



America's first indigenous amusement machine, THE LOCOMOTIVE, realistically showed off all of its articulations for 2 cents. It was produced by William T. Smith of Providence, Rhode Island, in October 1885. Photography by Bueschel.



The insides of Smith's THE LOCOMOTIVE of 1885 shows the coin drop; battery and gear box, right; and chain drive prime mover, left. The entire machine is encased in an oak cabinet, the locomotive model on top under glass. Photography by Bueschel.



Smith's THE LOCOMOTIVE was a stand alone money maker. Typical locations were stations and amusement centers, and typical audience children. Many young boys of the day dreamed of being a locomotive engineer. Photography by Bueschel.

ticularly Londoner Thomas Crapper's Valveless Water Preventer, an advanced development of the toilet that provided a water storage tank for a fast, controlled, water conserving flush. The cost-reduction and water conservation advantages of Crapper's system found greater application in the United States — just then erecting many of its railroad towns and most of its public buildings which included the new technology of indoor plumbing —than in England, making the inventor a wealthy man. If Sir Thomas Crapper (he was knighted for his body of work in plumbing) could make a bundle in this nation of outhouses, why not coin machines in a country that had more saloons per capita than any other nation on earth? So the Brits patented their devices in the United States and came over to cash in on their cleverness. What they hadn't counted on was American ingenuity, and the capability to digest an idea almost instantly, and then make immediate improvements. They should have been forearmed, for they were forewarned. The American patent system provided the warning signals. In the British system, and most others, an inventor has a patent once an application is made, to be disproved later if that is the case. But in the American system months, maybe even years, can transpire before a patent is issued. The patent inspectors want to be sure that nothing else similar to what they're looking at has crossed their desks before, so a patent search is initiated and concluded to their satisfaction before a patent can be issued. While this process is going on (actually for the second time, as the inventor's patent lawyers did the same thing before they applied for a patent, but the patent office always felt they might have missed something) the product can be produced, although the identification "Patent Pending" must be carried to protect the hopefully forthcoming patent rights. Once a patent has been issued, the product must carry the patent number or date to continue the protection, a fairly clear indication that the American patent system was designed for the use with manufactured goods — in effect "things" —— rather than processes or techniques. A parallel U.S. Patent system was also available for product designs ——the appearance of an item rather than its workings and parts — often leading to the need to have both mechanical and design patents to fully protect any new idea. Following the rules, the British applied for their patents, and waited. And while they waited, a rash of American ideas glutted the system, reaching beyond the British scope while the Brits had their applications checked against the American art. Anywhere from nine months to a year or two was needed to process each British application and issue a patent. It was just enough elapsed time to blow out the initial British claims and pave the way for the American acceptance of improved domestic ideas. Of the many British coin machine patents that were entered in the United States between 1885 and the late 1890s after having been patented in England and elsewhere, only a few found application in the American market. And of the many British coin machine inventors who came over to follow in the financial footsteps of Thomas Crapper, only Percival Everitt stood out, with a brief stint of the production of his coin-operated weighing scale by E. & T. Fairbanks and Company in St. Johnsbury, Vermont, and the modest success of one or more of his vending machine ventures in New York City. And that was about it. In exhibition, amusement and saloon machines, the British invasion was a bust while the very fact of its existence paved the way for the made-in-America entries into the market.

It was the difference in the American attitude, and what their inventors really expected to achieve with their



Boston's Park Square Station of the Providence Division on Kneeland Street, the first identifiable railroad station location placement of William T. Smith's THE LOCOMOTIVE coin machine made in Providence, Rhode Island. Period is circa 1886. Courtesy of The Society for the Preservation of New England Antiquities.

coin machines, that may have led to the strong preference for the domestic product. And here three American coin machine pioneers stand out for their insight as well as their mechanical ability. They literally created the American amusement — later to become arcade — coin machine industry by providing popular products that captured the public's attention and held it for years. The unequivocal leader of the American drive for coin machine self-sufficiency was William T. Smith of the highly industrialized city of Providence, Rhode Island, a machinery and steam engine building center located on the north arm of Narragansett Bay, with both rail and steamboat connections to nearby New York City and Boston. No greater illustration of America's rapid industrial growth could be conceived at the time beyond that of a trip to these three cities and their environs. Within their limits, and most evidently in New York, the ikons of this industrialization were just beginning to raise their heads for generations to come. The tall, stone towers of the Brooklyn Bridge to be stood silently in the East River, finally strung together in May 1883, to finalize the greatest engineering feat on earth and join the boroughs to create America's largest city and port of entry to the New World. Raising, also, was a monument to this port and to the courage of those who would enter it. A gift of the people of France to commemorate an enduring friendship forged in America's Revolutionary War of liberation, the State of Liberty would soon stand as the largest monument on earth. Bigness for the sake of itself was an American trait. So was betterness, or at least a belief that this could be accomplished. Above it all was a growing pride that things American did indeed have value and could take their place among the products and inventions of Great Britain and Europe. Pride in place was beginning to be supported by an escalating pride of productivity.

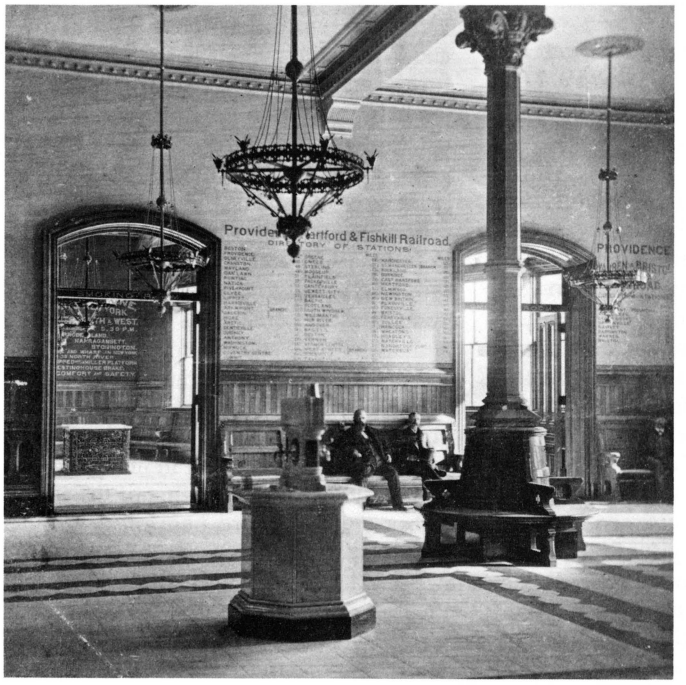
William T. Smith sat in the precise center of this growth. The son of a Scottish immigrant of the same name (William T. dropped the Jr. from his name upon his father's death) and a mother born in Maine, young Smith learned his metalworking and mechanical skills at his father's knee. The senior Smith had a gold refining business on Summer Street in downtown Providence, founded in the middle 1850s just after the California gold rush. Young Smith joined his father's firm in the 1870s, and then entered his own prototype and pattern model making business in the early 1880s.[24] Along the way he began to develop a number of industrial products, including a safety-seal for gas traps in 1885. But his true passion was in model making. This was just about the time that the American romance with railroading began to hit its stride. The "last spike" was driven at Gold Creek in the Montana Territory linking east and west on the Northern Pacific route on September 8, 1883, the same year that the railroads adopted standard time in four time zones across the continent. Crack trains entered service between Philadelphia, New York and Washington, D.C. in 1885 and California oranges were reaching eastern cities by rail the following year. Most little boys, and no doubt some little girls, wanted to be railroad engineers (just as youngsters today want to be astronauts) and the whole country began to travel — short hops, and long — by rail. To manage this endless flow of human traffic, enormous edifices were built as railroad stations for major cities, serving as the main entrances and exits to the city on the only form of transportation capable of handling large numbers of people going in many directions. By the 1870s the first of the really big stations were beginning to be built. By the 1880s every city of substance wanted one for their front door as a matter of civic pride.

Providence, Rhode Island, was hardly immune to the national adoration of the rails or local dreams for a monumental depot. It was, in fact, the location of the first major American railroad station, designed by a 22-year old Thomas Tefft in 1848 who, for the next decade, had a productive career as the

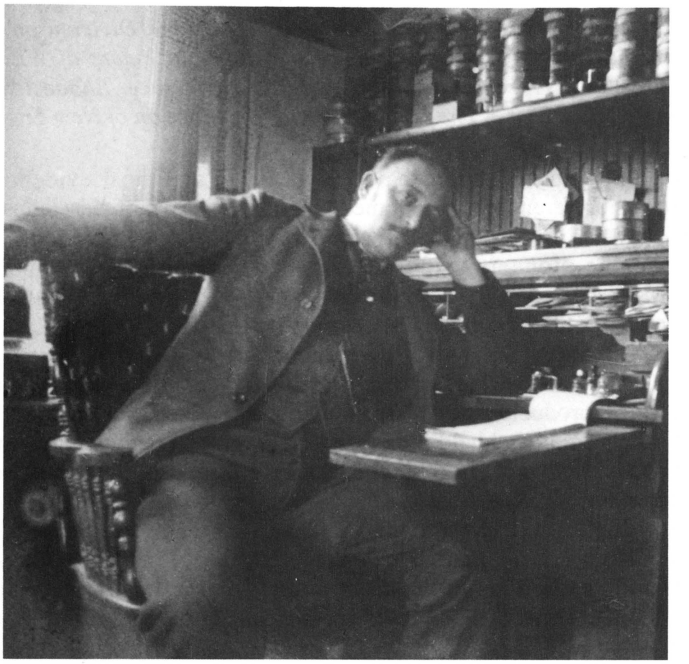
dean of American depot architects. 37 years after it was built, in 1885, the Providence station was still voted as one of the 20 most architecturally significant buildings in the United States.[25] It was the same year that local engineer William T. Smith created the first American arcade machine. Inspired by railroading and wishing to create an elaborate coin-operated entertainment that provided a consequential return for the money, Smith opted for simulations of the booming mechanical age as his theme. No doubt aware of the British exhibition machines by Henry Davidson and John Dennison through the pages of American journals such as *American Artisan* and *Scientific American*, Smith saw his machines as something different. Where the British preferred articulated exhibitions of events, Smith's devices were built to bring the wonders of the age to the public through miniature working displays of actual large scale machines. They were, if anything, both entertainment and educational, an optimum sought in arcade machines for the next century although rarely achieved. Yet the first of their ilk did just that, which may have contributed enormously to their success. There was another contribution that made the machines so successful, and that was the fact that they could stand alone and didn't need constant rewinding to keep them from running down. Trained as an engineer rather than a showman, William T. Smith added high technology to his inventions. He had access to something Davidson and Dennison didn't have, and once more, he know how to use it. He used the fractional horsepower electric motor, driven by a wet cell battery contained in their cabinets.

Rather than create one machine at a time, Smith started out with a whole line of working models, all driven by the same basic mechanism. He described his approach as "...that class of apparatus which are designed to excite the interest or curiosity of the public, and in which are employed...a model or miniature locomotive, steamship, steamboat or other device in connection with a music box or musical apparatus...that upon the dropping of a coin into a coin-tube the mouth of which is exposed to view...actuating a stop to release the operating mechanism...and in turn actuate the musical apparatus as will as give motion to the driving wheels of a...miniature locomotive...or...rotate the paddle wheels of a steamboat if the latter in designed to be exhibited. Usually the music box and operating mechanism are inclosed in a neat case or box...while the miniature locomotive of other model, usually of fine workmanship, is inclosed within a glass case...so as to be examined by the public and to enable the motions of the driving wheels to be seen when the apparatus is put in motion."[26] In describing his electrical driving mechanism, Smith noted his power source was "...designed to exhibit a miniature locomotive, steam engine, steamship of other object" as well as "...enable the lighting up with electricity such models, as well as models of public buildings and other objects of general interest upon the dropping of a coin."[27]

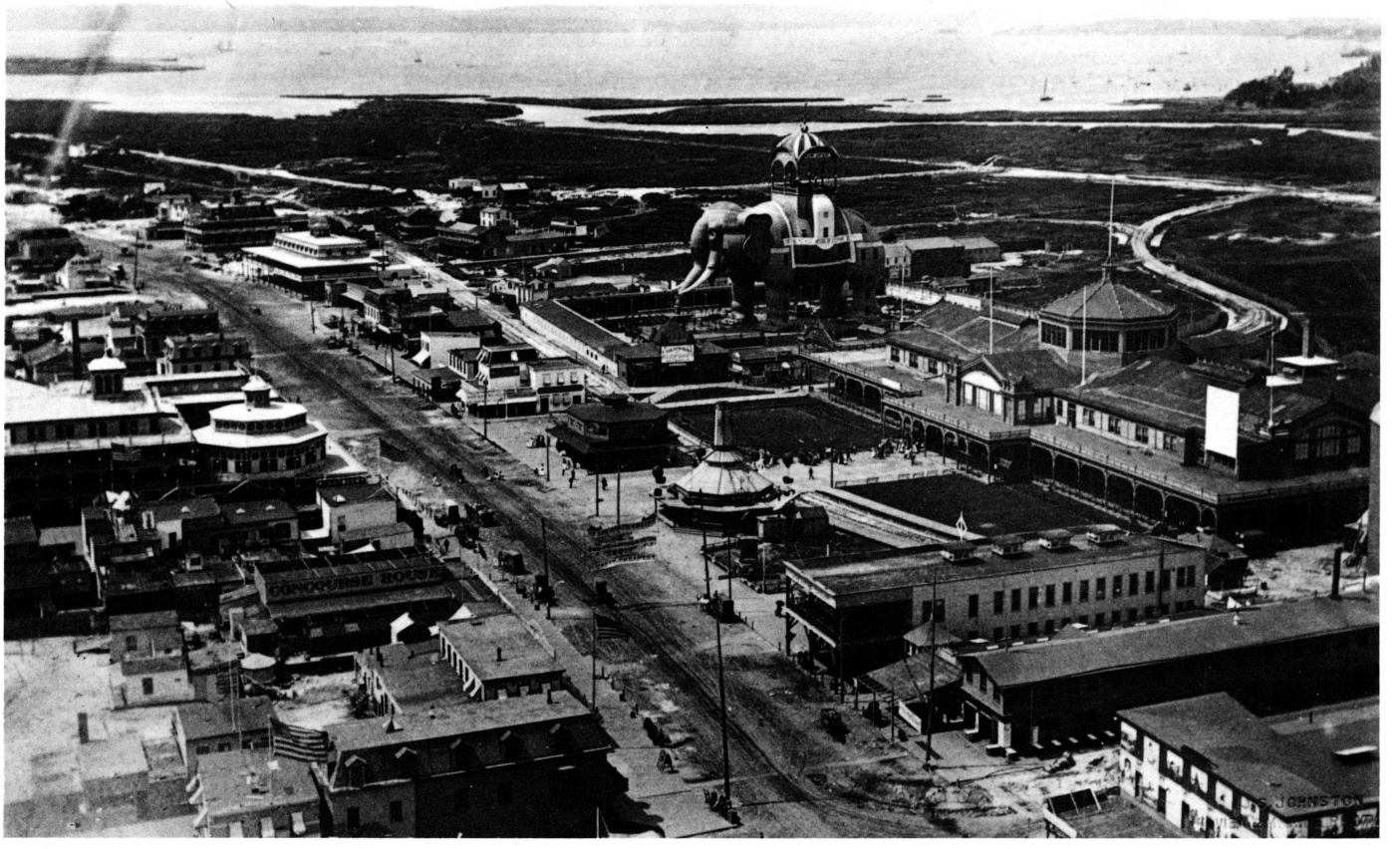
With railroad stations, steamboat docks and other public buildings, thoroughfares and arcades — the latter, a multi-establishment building of numerous tiers under an iron-beamed atrium roof open to ambient light, and the form of structure that would later give the business of operating a wide variety of amusement machines under one roof its generic name — the obvious locations for the operation of Smith's machines, it wasn't long before placement proliferated. The earliest recorded



Smith's THE LOCOMOTIVE was placed inside of the Park Square Station, possibly in the billiard room, on the opposite side of the general waiting room from the smoking room, the open door to the left. Many eastern and mid-western railroad stations had the machines by the late 1880s. Courtesy of The Society for the Preservation of New England Antiquities.



One of America's outstanding pioneers in coin machines, motion pictures, the phonograph and the art of weighing rail lading, Edward Hill Amet of Waukegan, Illinois, is largely unheralded. Amet is shown at his desk in his Waukegan laboratory. Lake County Museum, Lake County, Illinois.



The Sea Beach Palace at Coney Island, New York, the large building at center right, was another Smith THE LOCOMOTIVE location. The resort hotel also had a Smith STEAMBOAT coin-operated exhibition machine in the lobby. Circa 1887. Museum of the City of New York.

placement was in Boston, America's first railroad center, remembered by machine industry old-timer H. H. Brown: "The first coin operated machine I remembered seeing was a model of a locomotive in a glass case made by W. T. Smith Providence, Rhode Island. These were placed in most of the large railroad depots in Boston around 1882 (it was more likely 1885) and they operated for a nickel."[28] Boston's largest depot at the time was the Old Colony Railroad's Park Square Station on Kneeland Street, "the most completely equipped American station of its day. It had a separate gaslit smoking room equipped with inside shutters, a popular barber shop, telegraph office, newstand, lavatory, boot black and check room. The lofty general waiting room was provided with rose windows and clusters of gaslights. Delicate iron tracery screened the steam radiators. There was a reading room and a billiard room."[29] Such was the seemingly first location for Smith's THE LOCOMOTIVE, most likely placed in the billiard room for small boys and grown men to watch while others played the tables.

Smith's machines soon began to move across the country. Jocular Coney Island, then building as the nation's first large amusement area and a seaside getaway for tired New Yorkers, embraced the new machines. "In the 1880s, the Sea Beach Palace on Coney Island," an elegant resort hotel with shops, restaurants and a ballroom built in 1879, "...had boasted penny-operated machines which would set locomotives and steamships into sound and motion."[30] In New Orleans, "...a few other machines were introduced here, among them...the HORSE RACES (a moving race machine made in New Orleans in 1891 by Automatic Machine Company, Ltd.) and THE LOCOMOTIVE, both elaborate and intricate pieces of delicate mechanism. But these were exceedingly costly, especially THE LOCOMOTIVE, which was a perfect model of a locomotive and was worked by springs which were set in motion by the dropping of the coin in the slot."[31] On to Chicago, where there was a "...model locomotive in one of the big Chicago railway terminals. For a penny the drive-wheels would start turning and the bell would ring and the headlight would flash on. People went out of their way to see this miniature engine and make it run. It must have taken in hundreds of dollars before it went to a museum."[32]

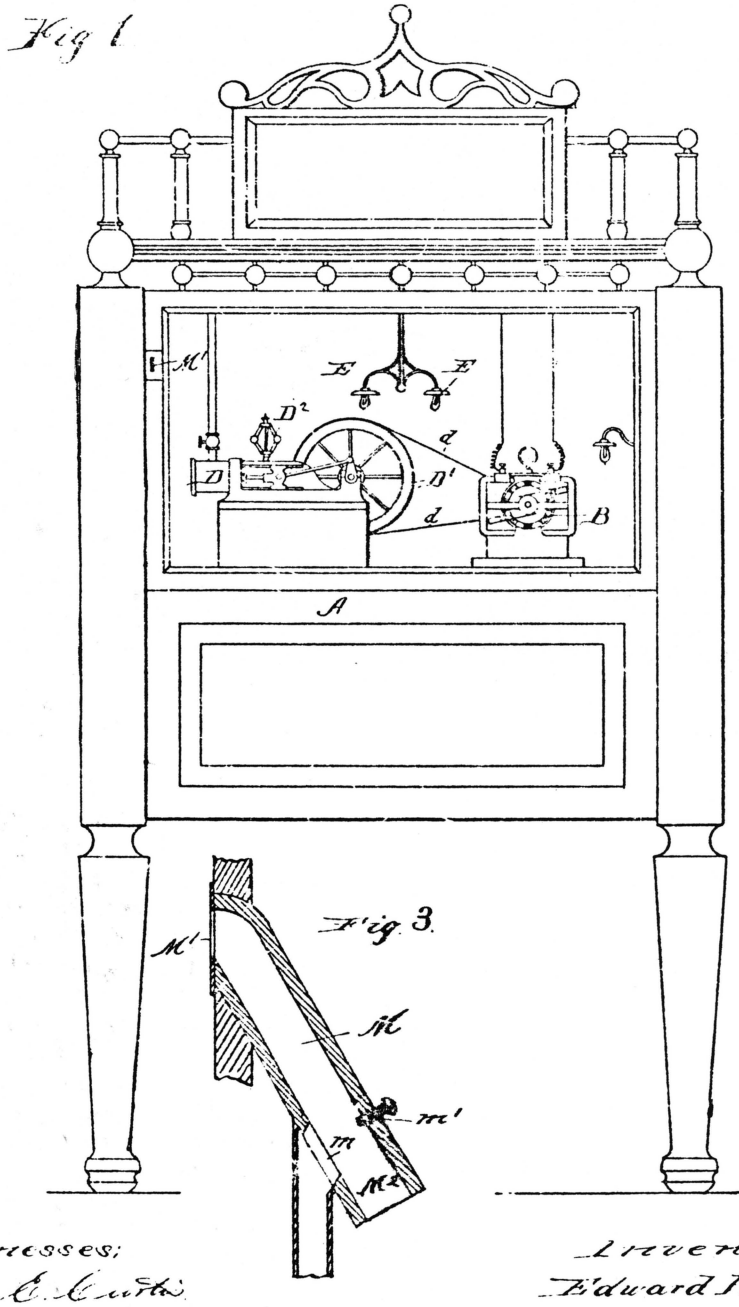
As Smith's uniquely American form of exhibition machines worked their way into national acceptance, they caught the attention of one of America's leading unsung inventive geniuses. Edward Hill Amet lived in Waukegan, Illinois, a Lake Michigan port city and lake white fish fishing center some 40 miles north of Chicago, not quite an hour by rail up Chicago's newly fashionable North Shore. A first generation American born in Pennsylvania in November, 1861 right at the beginning of the Civil War, the same month President Lincoln gave command of the Union forces to General George McClellan after the disastrous first Battle of Bull Run, Amet grew up in the Golden Age of railroading and during America's unprecedented industrial

(No Model.) 2 Sheets—Sheet 1.

E. H. AMET.

COIN OPERATED DISPLAY APPARATUS.

No. 414,000. Patented Oct. 29, 1889.



Witnesses:
Lew. E. Curtis
A. M. Munday

Inventor:
Edward H. Amet.
By Munday, Evarts & Adcock
His Attorneys.

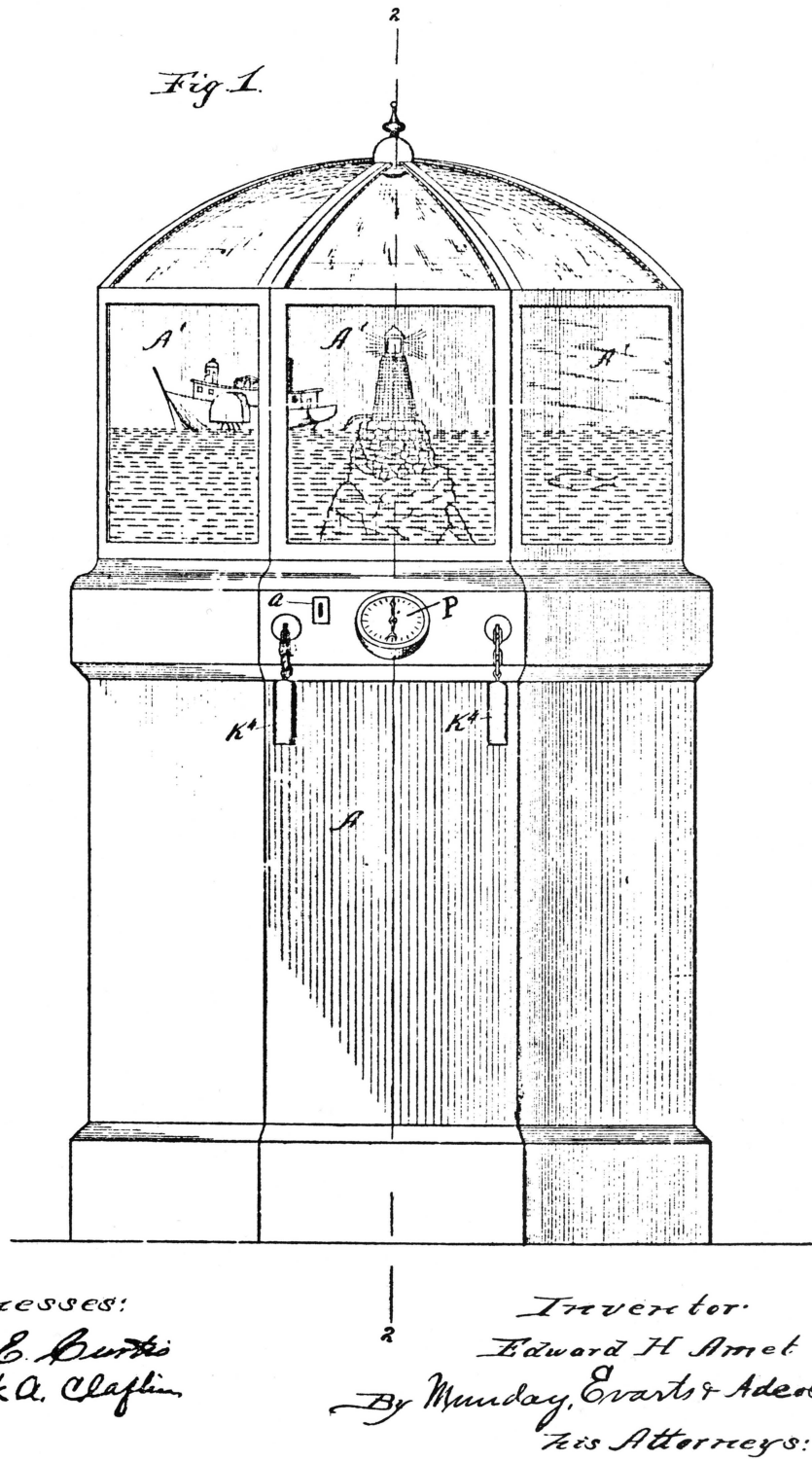
Edward Amet played on America's fascination with its new prime mover — electricity — in his coin machine POWER STATION. It was produced by Amet's Electric Advertising Scale Company in Chicago in the spring of 1889. U.S. Patent Office.

(No Model.) 3 Sheets—Sheet 1.

E. H. AMET.

COIN OPERATED DISPLAY APPARATUS.

No. 423,654. Patented Mar. 18, 1890.



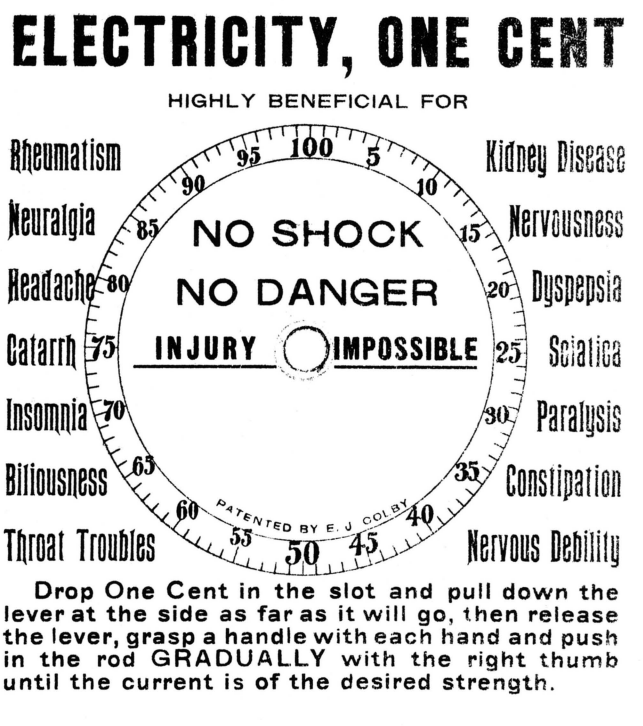
Amet's STEAMBOAT exhibition machine, also made by the Electric Advertising Scale Company, was the summer 1889 replacement of POWER STATION. It was also a shocker, players holding the hanging handles. The boat moved in a circle in real water. U.S. Patent Office.

growth after the war. A tinkerer and experimenter, a trait no doubt encouraged by his French-born father and English-born mother, young Edward Amet already had his first patent at the tender age of 26. It was for an industrial weighing scale that automatically recorded the weight of a product. By the end of the year, in November, 1888, Amet received a patent on a device that automatically weighed railroad cars, adding to the art the following year to weigh and record the weight on a drum register while the cars were moving. The same method is used to this day, electronically, produced by a firm in a northwest suburb of Chicago that still contains Amet's name on its title, an accolade among existing industries also awarded only to Amet's contemporary, America's number one inventor, Thomas A. Edison.[33]

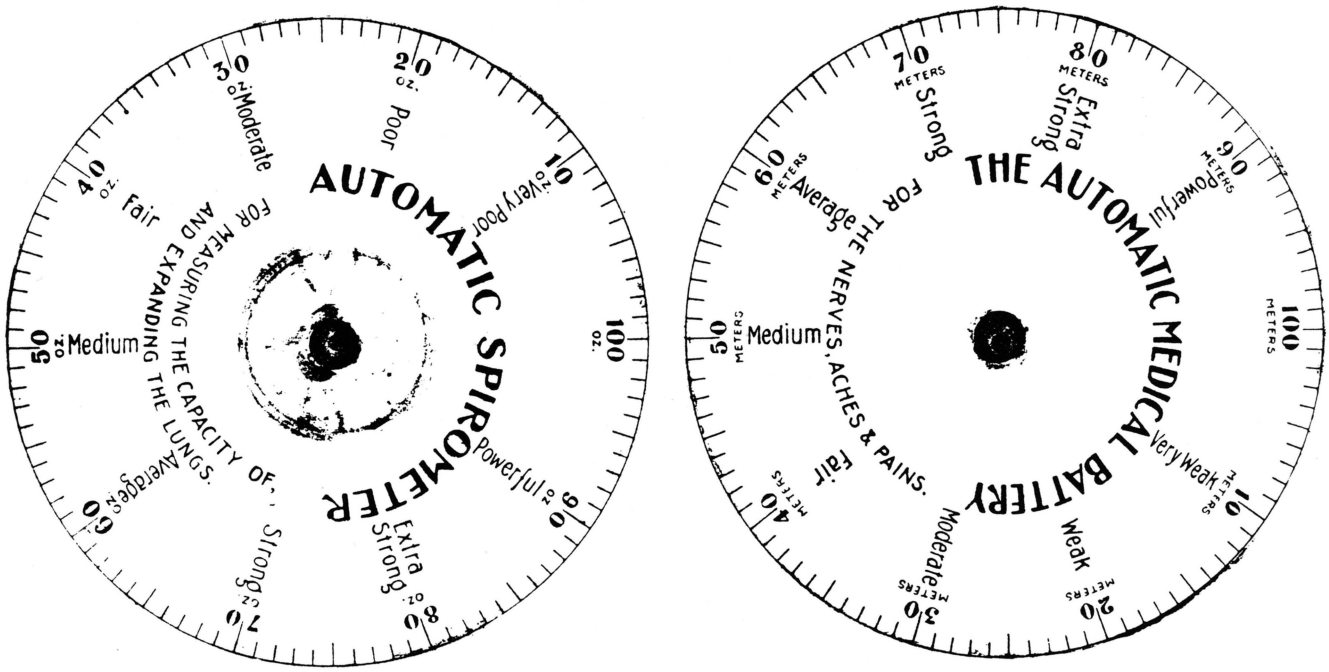
During this inventive binge, Edward Amet also found time to invent an electrically operated, coin-controlled scale that printed a ticket with the user's weight. While waiting for a patent on the device, which he received in the summer of 1888, Amet formed the Electric Advertising Scale Company in Chicago to produce his machines, solidly placing him in the nation's embryonic coin machine business as one of the industry's early pioneers and coincidentally positioning Chicago as one of the primary producing centers. Amet obviously followed the *U.S. Patent Gazette*, a monthly government publication that announces, illustrates and describes all of the patents issued each month by the U.S. Patent Office, a periodical religiously followed at the time by most Americans involved in industry and inventions, for Amet's coin machines closely tracked prior art. Only Amet improved on the originals a great deal, and enough to receive new patents on his enhancements. Amet's electric scale followed the American patents for Britisher Percival Everitt's scale. And now Amet's next work in coin machines would follow the work of fellow American William T. Smith. Amet retained the same concept, that of working industrial and transportation displays, consciously reaching out for the same locations as Smith's machines as newer, more advanced models, thus establishing the time-honored coin machine industry tradition of besting and replacing the competition. Amet's first effort reflected an ongoing theme in the popular press, picking up the vast amount of attention surrounding an exciting new technology. The world's first hydroelectric plant began operation at Appleton, Wisconsin on September 30, 1882, damming a channel between Green Bay and Lake Winnebago, to supply electric light and power to two local paper mills.[34] The idea quickly sped to Europe, and elsewhere throughout the world and the United States, with the Niagara and other major and minor rivers soon harnessed to provide electricity to their surrounding areas. The advent of electricity was even more exciting than the arrival of atomic energy eight decades later for it changed the world, providing light and energy where neither had existed before. And the undeniable fact was that it was done first in America. Amet's expression of this theme was a working exhibit in a cabinet called POWER STATION which was "...set in motion by the coin closing an electric circuit. This motor is connected with the fly-wheel of a display-engine having a governor which operates a movable contact-piece and closes an electric circuit through one or more incandescent lamps. The electric motor is also connected with a contact making or breaking device which controls the length of time the motor runs each time it is set in motion."[35] The sci-



Colby machine label used by the Automatic Spirometer Company, 1898, and Arthur Schiller And Company, 1902. The same machine had a wide variety of producers and fronts. Bob Legan Collection.



Chicago mail order house Ogden And Company label for its "Colby," produced in 1897 as AUTOMATIC MEDICAL BATTERY. Note the list of ills that are supposedly aided by the machine. Bob Legan Collection.



Double dials of the COMBINATION LUNG TESTER made by the Colby Specialty Supply Company in 1892 and the Colby Specialty Manufacturing Company in 1894 carry different machine names for each function. These dials also used on the Arthur Schiller And Company GOOD HEALTH in 1902, probably produced private label by Colby. Bob Legan Collection.

each time it is set in motion."[35] The scientific press, which followed the progress of electric power, gave the same attention to coin machines, including Amet's. This press described his POWER STATION as a device "..in which on the dropping of a coin into the chute an electrical motor is energized, which causes the operation of a miniature engine and the alternate lighting and extinguishing of two series of electric lamps. These devices are, of course, inclosed in a glass case so that the various operations may be clearly viewed."[36] Amet's next machine was even more dramatic. STEAMBOAT of August, 1889 combined a working model with an action machine, bringing the device closer to the mainstream of arcade machine development. An actual tank of water a the top of the machine contained " ... a miniature steamboat ... made to sail around in the water ... driven by a suitable electric motor set in operation by the receipt of a coin." In addition, Amet added to the " ... coin-controlled display mechanism an electric shocking device, the latter being provided with the usual handles for the person who desires to receive an electric shock to take hold of ... governed by a revolving rheostat ... attached to the shaft by which the boat is driven."[37] Edward Amet had come full circle to provide both exhibition and personal involvement, stealing a march on what had up to now been single purpose machines built by the British.

The next development, and the first entertainment coin machine to be nationally advertised, was the product of a uniquely American concept, that of the well-funded corporation created to exploit the potential of the new coin-controlled machines. The Howland Manufacturing Company, 216 Church Street, New York City, was assembled in March, 1889 " ... to manufacture novelties, automatic devices, machines and appliances (and) operate, lease or licence the same" included four inventors among its seven Orange, New Jersey, Brooklyn and New York City trustee investors.[38] The first product of note was a large countertop calculating machine with a coin chute called the AGE INDICATOR, created by trustee inventor Franklin W. Brooks of New York the previous November, less than a year after inventor Door Eugene Felt created his COMPTOMETER, the first finger keyed calculator to come to the market. Brooks created " ... a machine or apparatus the parts of which being so arranged ... that the weight of a coin shall act to place the same in condition ... to be operated to bring to visual inspection a set or series of numbers from which the ages of individuals may be calculated or determined."[39] Not stopping there, Brooks added a feature to the AGE INDICATOR that provided an operator the assurance of income from a stand alone machine for the first time; "In addition to the features ... which give it the nature of a calculator for determining the age of individuals, I resort ... to the employment of a mechanism for registering each and every coin deposited ... so that the person in charge or authority can know at all times the number of coins received, thus rendering it difficult for anyone to abstract any of the coins without trace or detection."[40]

What made the Howland AGE INDICATOR so unique was the way it was marketed. It promised a payback, a completely new idea in coin machine promotion. In a large space advertisement appearing in the November 8, 1890 issue of *The National Police Gazette*, the headline blared, "Barkeepers, Cigar Dealers — this machine will pay your gas bills" The ad went on to promise that the machine was the "Most profitable investment for every bar, cigar stand and drug store. Will pay for itself in from 20 to 60 days; subsequent earnings all velvet. The machine will last years. Handsomely nickel plated.

Ornament to bar or counter."[41]

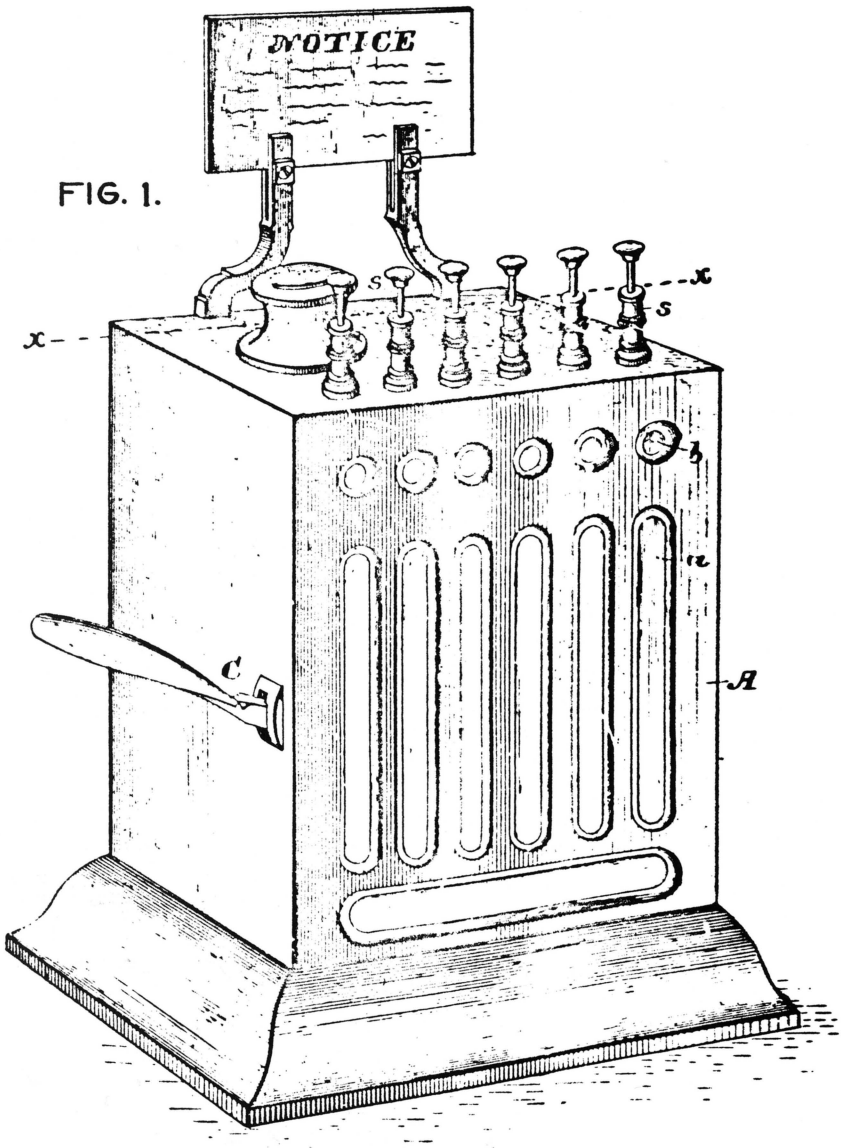
(No Model.) 4 Sheets—Sheet 1.

F. W. BROOKS.

COIN OPERATED CALCULATING MACHINE.

No. 399,129. Patented Mar. 5, 1889.

FIG. 1.



ATTEST.
J. Henry Kaiser
E. Everett Ellis

Franklin W. Brooks
INVENTOR
By
Wm C. McIntire Atty.

Abvoe and next page: The AGE INDICATOR by the Howland Manufacturing Company in New York City, March 1889, was widely advertised to the saloon trade as a way to make money. A coin operated adding machine in concept, it told the player's age once a series of questions were answered by push buttons. U.S. Patent Office.

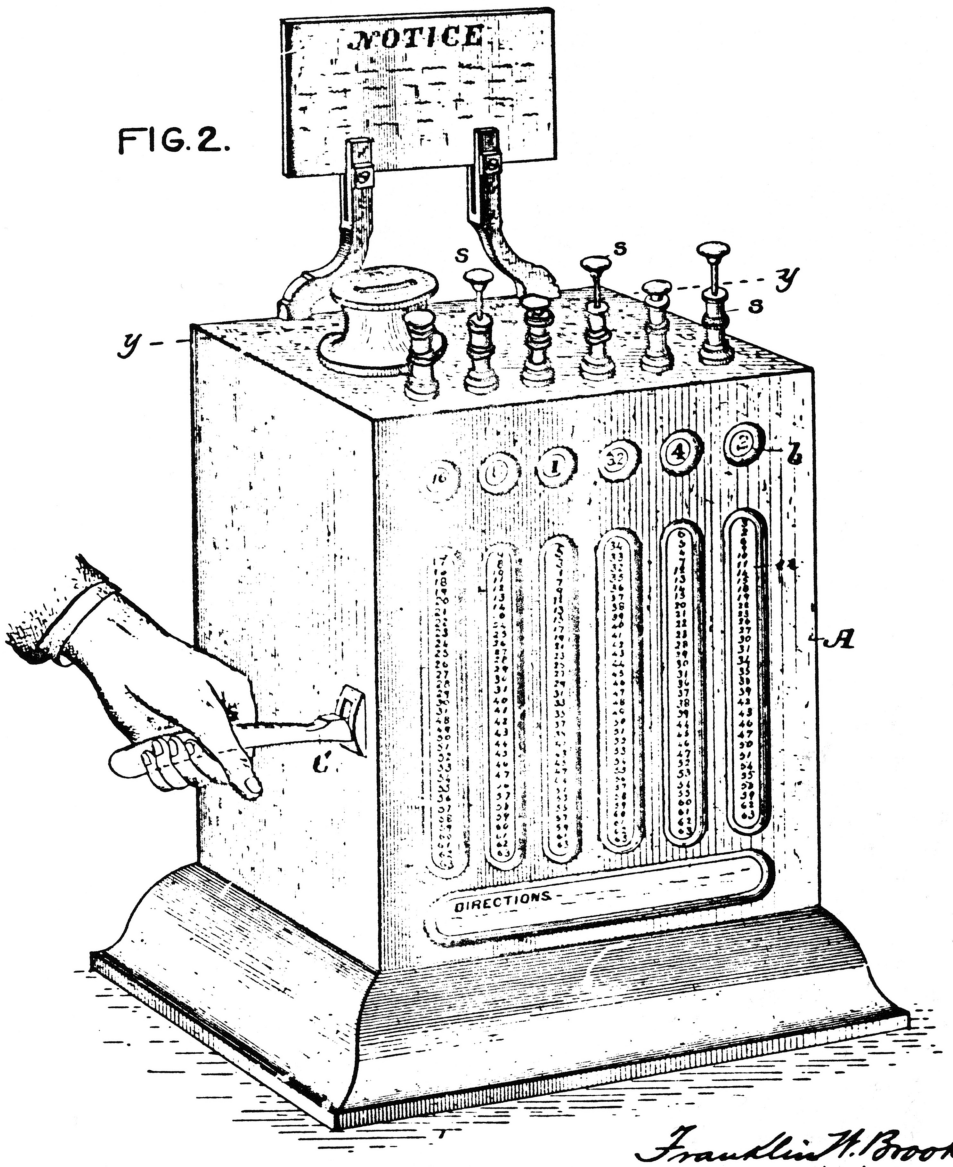
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F. W. BROOKS.

COIN OPERATED CALCULATING MACHINE.

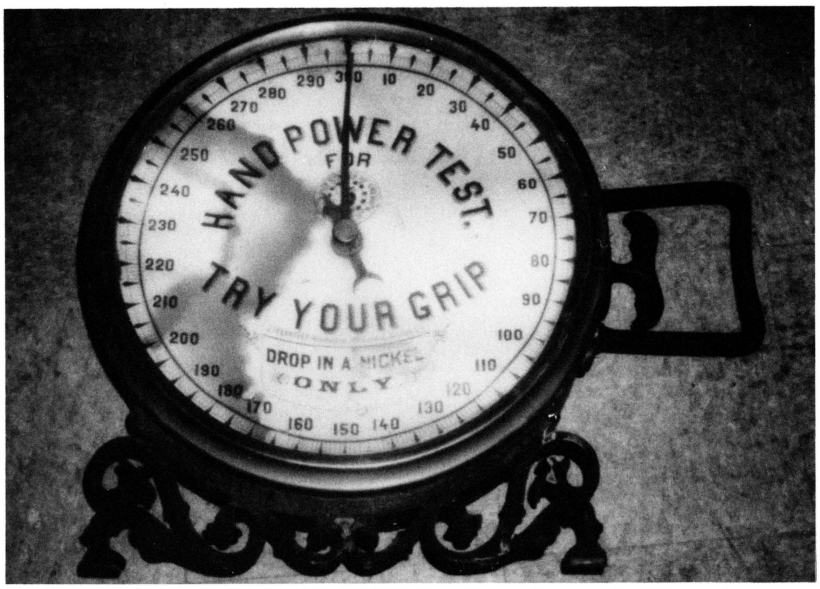
No. 399,129. Patented Mar. 5, 1889.

FIG. 2.



ATTEST.
J. Henry Kaiser.
E. Everett Ellis

Franklin W. Brooks
INVENTOR.
By
Wm. G. McIntire Atty.



The Joseph DeVantery 1888 gripper was a one-handed — right handed — model. Arcade machine maker Peter Beetz changed it to two-handed play. Photography by Bueschel.

In explaining the success of the machine, the lengthy ad went on to quote other sources: "*Town Topics* says of this machine: 'The latest thing in nickel slot machines has just made its appearance in the Hoffman Cafe and other fashionable barrooms, and, judging from the curious crowds that surround the little joker, it bids fair to be as successful a gatherer of shekels as any of its ingenious predecessors. The new device is a marvelously clever combination of arithmetic and mechanics, and for a nickel guesses your age without ever making an error, though it is hinted that if the curious seeker for information be a spinster it never records above nineteen. In any event, as an example of the inventive genius of the age, the AGE INDICATOR is a daisy.' The ... machine is one of the best money makers on the market to-day, and is recommended as such by the Hoffman House, Morton House, Union Square Hotel and others in this city."[42] American amusement machine development had closed the gap with the British, and had found the location that would not only support the machines but would lead to a consistently dynamic program of new machine development. Just as the Brits found the enduring valve of pub placement, the American coin machine makers had found the saloon. The machines and the locations were made for each other, and would prove the point for another thirty years.

[24] Data from City directories and researches by Mrs. Mildred T. Giusti, Reader's Advisory Department, Providence Public Library, Providence, Rhode Island, June 19, 1980.

[25] *American Architect,* June 13, 1885.

[26] William T. Smith, of Providence, Rhode Island, *Exhibiting Apparatus,* Applied December 28, 1885; U.S. Patent No. 358,897, March 8, 1887.

[27] William T. Smith, of Providence, Rhode Island, *Electrical Attachment for Exhibiting Devices*, Applied December 28, 1885; U.S. Patent No. 339,706, April 13, 1886.

[28] H.H. Brown, "About... Those Old-Time Scales," *The Coin Machine Journal*, May-June, 1932.

[29] Carroll L.V. Meeks, *The Railroad Station - An Architectural History*, Yale University Press, 1956.

[30] Gary Kyriazi, *The Great American Amusement Parks - A Pictorial History,* Citadel Press, Secaucus, New Jersey, 1976. A number of the machines mentioned survived the years, operating in Steeplechase Park and going into private collections when these materials were auctioned off in the 1960s.

[31] "Courts Will Decide on Slot Machines," *The Daily Picayune,* New Orleans, Louisiana, December 30, 1899. Courtesy New Orleans Public Library.

[32] Perc Smith, Arcade Division, Exhibit Supply Co., "Penny Amusement Machines Yield Big Profits," *Automatic Age,* April, 1940. Smith's reminiscences may contain more wishful thinking then fact. No Chicago museum ever had a coin-operated locomotive in their holdings. Author Dick Bueschel remembers watching a two-cent play Smith LOCOMOTIVE AND TENDER in an arcade strung along the corridors of the eastern end of Chicago's Navy Pier in 1936, an arcade that had been set up around 1920. It may have been the same machine. The machines of this arcade were apparently junked during World War II when the Navy Pier became a naval training center, although co-author Steve Gronowski bought a number of them in the 1960s.

[33] The firm is Streeteramet Measurement Systems Division, Mangood Corporation, 155 Wicks Street, Grayslake, Illinois.

[34] The hydroelectric plant is still there, now a static historical exhibit and living museum.

[35] Edward H. Amet, of Chicago, Illinois, Assignor to himself and Herbert A. Streeter, of Same Place, *Coin-Operated Display Apparatus*, Applied: March 29, 1889; U.S. Patent No. 414,000, October 29, 1889.

[36] W.L. Aughinbaugh, "Nickel-in-the-Slot Machines," *Scientific American Supplement No. 797*, April 11, 1891.

[37] Edward H. Amet, of Chicago, Illinois, Assignor to himself and Herbert A. Streeter, of Same Place, *Coin-Operated Display Apparatus*, Applied: August 5,1889; U.S. Patent No. 423,654, March 18, 1890.

[38] Articles of Incorporation, *The Howland Manufacturing Company,* written March 23, 1889. Filed and recorded June 18, 1889. Department of State, State of New York.

[39] Franklin W. Brooks, New York, New York, *Coin-Operated Calculating Machine*, Applied: November 17, 1888; U.S. Patent No. 399,129, March 5, 1889.

[40] *Ibid.*

[41] Advertisement, The Howland Manufacturing Company, *The National Police Gazette*, November 8, 1890.

[42] *Ibid.*

LATEST

NICKEL IN THE SLOT

MACHINES

MANUFACTURED BY

M. O. Griswold & Co.

ROCK ISLAND, ILL.

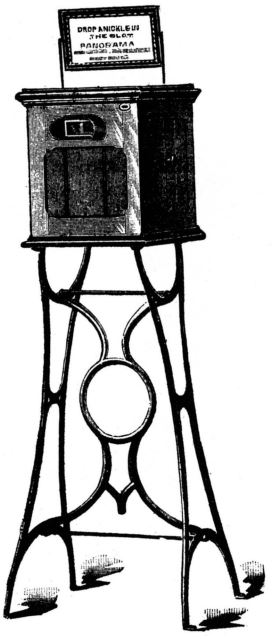
U. S. A.

AGENTS WANTED

In territory unoccupied for Nickel in the Slot Machines. Write to-day.

Kramer, Bleuer, & Co., Printers, Rock Island, Ill.

The first of the popular peeps, the M. O. Griswold And Company AUTOMATIC PANORAMA of summer 1891 was leased, not sold. The Griswold firm provided a large library of views, 15 per showing, with historical sites and occupations (such as cotton picking) the claimed favorites. Bueschel Collection.



AUTOMATIC PANORAMA.

tants in your city, and if you take several machines, enough to justify it, we will give you exclusive right for your city. When this is done, we figure about 2,000 inhabitants for each machine.

All money taken in by the machine, less rental, is profit, as all they get is to see the views for their money.

Do not delay, write at once, be the first in your vicinity. If you have the first, everyone will be anxious to see it and will draw the crowds.

CONSTRUCTION AND FINISH The cabinet work is made of solid oak, with antique finish, and is fine enough to enter any business house. This cabinet rests on an iron stand at the proper height. The machine requires a space two feet square and six feet high. The weight of the machine, boxed, ready for shipment, is only sixty pounds, therefore it can be shipped by freight or express at very small expense. The machine is very simple and will not get out of order.

The machine, unlike many nickel in the slot machines which depend on their novelty for patronage, *will not grow old, as public interest is renewed with each change of the views.* They will continue to be a good money-maker for years.

The first machines put out and running where first placed take in as much money

now as at first, which proves this machine to be an everlasting taker.

A nickel is not much money, the average man does not think much of a nickel. Don't you think there are two hundred people come into your place per month who will spend a nickel to see this Panorama? If so, the machine will earn one hundred and twenty dollars a year. We think you will admit that this is a big return on a small investment.

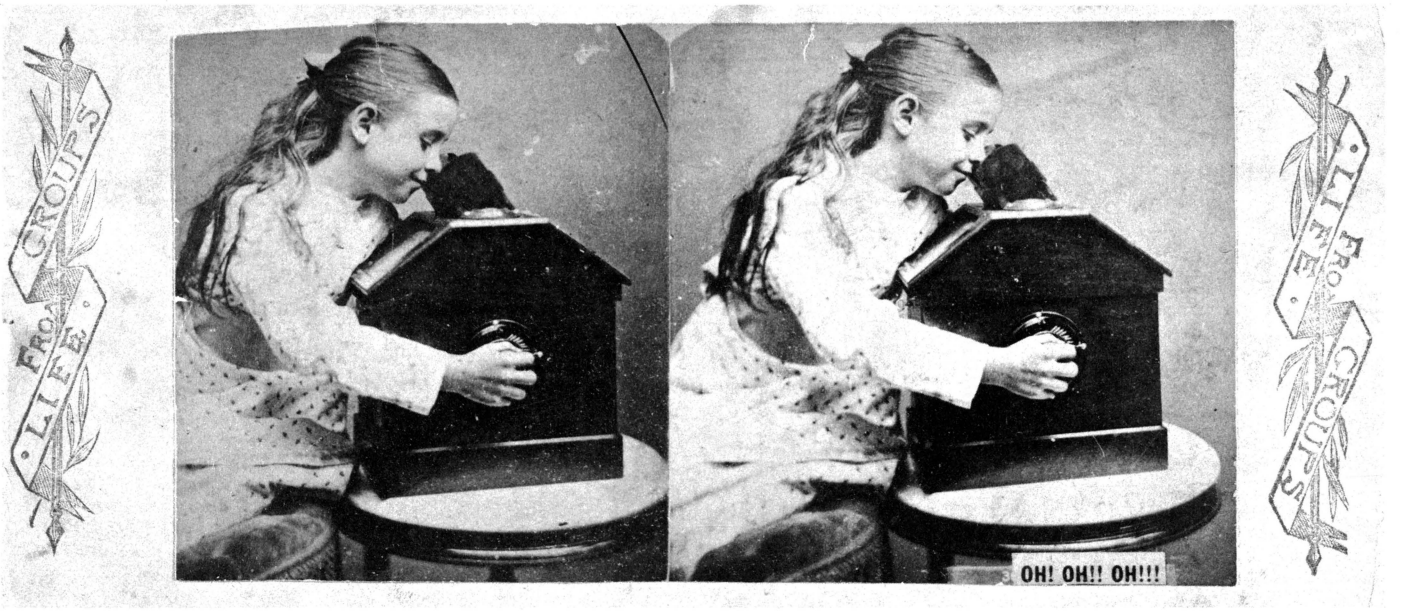
Ten minutes of your time each month is all that is required to change the views. This is two hours a year. Can you make over $50 an hour any other way? By placing the machines with others, a permanent business can be established and a steady income derived. We give exclusive territory and protect you in it.

Many of our customers are making big money by taking a large number of machines and supplying them to others, and allow them a percentage of the receipts. This is the plan upon which the machines are operated in all the large cities. We are prepared to furnish one or one thousand machines as desired.

We ship two sets of views with each machine, and upon the return of one, we send you another set of entire different views. This we do monthly, and thereby you do not show the same views twice during the year, making an entire new exhibit with

every change. By special arrangement, express charges on views to be exchanged will be, if prepaid, 15 cents. We prepay them out, but you must prepay them back.

We do not sell these panoramas, but rent them only by the year. We do not place them on percentage. If you think you would like a machine, write us, and we will send you a lease, and if same meets your approval, you can sign and return to us, and the machine will be promptly shipped by freight, or express, as you desire. If you cannot give the machine space in your place of business, kindly hand this to some other responsible business man.



A wide variety of unauthorized counter top HAND KINETOSCOPE models were made between 1894 and 1905 by producers all over the country. This is a variation of the AMERICAN PARLOR KINETOSCOPE made by Charles M. Campbell of Washington, District of Columbia. Bueschel Collection.

THE AUTO-RAMA

GRAND EXHIBITION OF LIVING PICTURES

PRESS THE BUTTON AND SEE ONE PICTURE FREE

••deposit nickel in slot to set machine in motion••

••the only automatic musical picture machine••

••twelve marvelous views contained within••

the AUTO-MACHINE CO. 131 LIBERTY ST. NEW YORK CITY

The Auto-Machine Company AUTO-RAMA offered an intriguing feature, a free peek at one picture to capture a nickel for the next 11 "marvelous views contained within." Tim Morsher Collection.

NEW ELECTRIC SHOCK MACHINE



The most attractive money getter ever placed on the market. By dropping coin in slot limbs of figure will move and show strength of current given. At 100 kicks the hat and rings bell. The only electric machine giving graduated current. Sample sent on approval anywhere, $7.50. New punching machine with air cushion, new lifter and forty other legitimate and chance machines. Send for beautiful illustrated catalogue and cut price list. To insure prompt attention all orders and communications should be addressed to: Salesroom: 1013 Grand St., Hoboken, N. J. Office and Factory: 315 Vine St., Philadelphia, Pa. Watch this space next week.



MILLS' NEW SLOT PUNCHING MACHINE

The biggest legitimate money maker ever put on the market; can be placed everywhere. A punching machine that is indestructible and made with our new air cushion; automatically registers the blows delivered and electrically rings the bell. **These are new features and placed only on Mills' machines.** Special inducements in quantities. We are the sole manufacturers of the new automatic lifting machine and forty other varieties of vending and slot machines. Send for beautiful illustrated catalogue. Our prices are the lowest and consistent with practical machines.

Main Office and Factory,
315 Vine St., Philadelphia, Pa.
Eastern Salesroom,
1013 Grand St., Hoboken, N. J.
Watch this space next week.

MILLS' NEW SLOT LIFTING MACHINE



JUST OUT. Beware of imitations of this machine offered by others, which are made to sell and have no stability. Our machine is constructed on a new principle and the mechanism is so simple that it is practically impossible to get out of order. The only machine on the market that will register accurately up to 1000 lbs., equipped with a handsome dial, showing how much persons should lift in proportion to their weight, and a new money box, entirely separated from the mechanism, and many other features, making it convenient for those operating a large number; an adjustable coin slot that will not clog and practically slug proof. Cabinet of mahogany or quarter sawed oak, oxydized or nickel trimmings and substantial iron base that is practically indestructible.

We have 60 varieties of vending and chance machines, including our new **AUTOMATIC SLOT WEIGHING MACHINE.**

The cost of our machines is no more than inferior imitations, and if not entirely satisfactory money will be refunded. Beautiful illustrated catalogue upon application.

Address all communications direct to

SALESROOM:
1015 Grand Street,
Hoboken, N. J.

FACTORY:
315 Vine Street, Philadelphia, Pa.

NOTICE: We are not responsible for orders placed through mail order agencies.

Above: High frequency small ads announced new machines as the Mills Novelty line grew by leaps and bounds. The shocker was advertised in the July 12, 1902 The National Police Gazette; the Puncher a week later on July 19; and the NEW SLOT LIFTING MACHINE was advertised August 30, 1902. The National Police Gazette.

MERRYMEETING

Amusement Parlor!

A GOOD PLACE FOR THE OLD, MIDDLE AGED AND YOUNG TO DRIVE AWAY CARE AND HAVE A GOOD TIME. COME AND ENJOY YOURSELF.

We have the Following Attractions:

The Up-to-date Shooting Gallery,
Philippine Novelty Game,
Mexican Cane and Knife Board,
Fremont's Prize Shooting Gallery,
Also Punching, Lifting, Grip,
Muscle, Lung, Electric, Cigar
and Picture Machines.

Prizes Given Away Each Week

FOR THE BEST SHOOTING.

We use the FAMOUS

Match-maker Brand Cigars,

the BEST CIGAR ever given away in a place of this kind.

We are open for Business each day, from 8 A. M. to 10 P. M.

For Fun and Amusement this is the place. Come and see the finest Amusement Parlors in the State.

W. S. FREMONT

MANAGER.

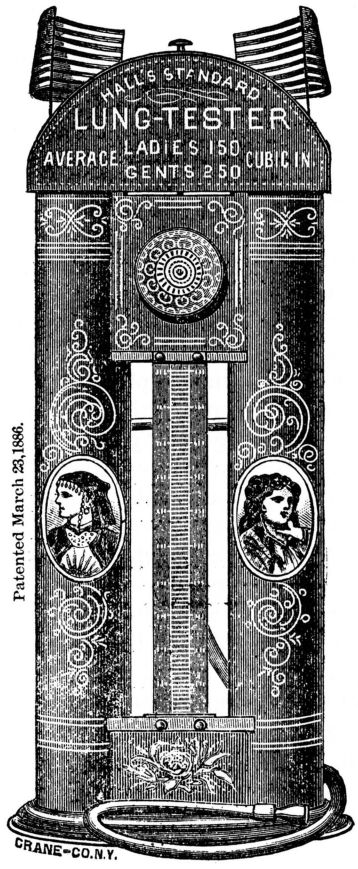
N. B.—We buy and sell show property of all kinds, Tents, Etc. If you have anything to Sell, or want to Buy or Trade anything in that line, it will pay you to call on me.

W.S. Fremont's Amusement Parlor! arcade at Coney Island, circa 1902, had Automatic Target gun games, Roovers and Rosenfield fortune tellers, physical test and peep show machines. It became a major attraction in the area. That the customers were mostly men in evidenced by cigar prized for good target shooting. Courtesy Fred Fried.

PUTTING PEOPLE TO THE TEST

The gentle exhibition amusement coin machine locations that reached and entertained men, women and children had seen its brief day, and suddenly it was all but gone. The reason was pragmatic. There wasn't enough money in it. Watching a locomotive or steamboat or electric power station run for a minute for a penny, two cents or a nickel was hardly any way to drop a lot of change, and once watched (and watched by others around the player for free) the player wasn't compelled to try again. So the machines spent much more time idle than running, and even new ideas ran dry in a hurry. Little wonder that the main thrust of coin machine development turned away from the static display to something more dynamic, such as the player involving athletic and physical test machines. All it took to keep a gripper, strength test, shocker, lung test or other form of real or unreal evaluation machine going was two players in competition. Multiply that by a lot of men, and who'll buy the next round of drinks at stake, and any test machine could be a money maker. That put coin machine development solidly in the saloons. And that included any and every form of coin machine. Music machines started with saloon placement, which also included peanut vending machines and scales. Trade stimulators and payout gambling machines would come later, starting as race games and 3–for–1 jackpot and bank machines in saloons. But from the very beginning, it was the competition machines that ruled the roost, enabling "The Boys" to challenge each other within the hallowed walls of "The Poor Man's Club," or local drinking establishment.

At the start of this rush, from the middle 1880s to the beginning of "...the 1890s a number of coin entertainment devices found their way to the United States from England, traveling in the



HALL'S STANDARD LUNG TESTER.

The public has long felt the necessity of a Spirometer (or Lung-tester) that would combine accuracy, beauty in form and shape, and pleasing and entertaining to the eye and mind, as well as ornamental and useful. Such is the one we take pleasure in presenting to our patrons for the first time. It is a beautiful instrument in every respect. It is highly decorated, has a silvery-toned patent gong attachment, which can be adjusted to ring at any desired figure upon the gauge, and is destined to become as popular as the piano or organ for parlor entertainment or amusement. So perfect are its workings that there is not the slightest pressure or weight upon the lungs, even the smallest child being able to register their lung capacity.

For parties who cannot get sufficient physical exercise to keep the outer cells of the lungs well open and well developed, these Spirometers are a mine of wealth. Air is life and vitality itself, and the lungs require as much, if not more, exercise than any other function of the body. Parties using these instruments will be surprised to notice the gradual increase of their lung capacity as they use it from day to day. This is because the outer cells of the lungs have become contracted and closed up (like a dry sponge) for the want of sufficient lung exercise. A man may walk, or hammer on an anvil all day, without exercising or expanding the respiratory organs. One of these machines has been in use in the *Police Gazette* office during the past year, to register the lung capacity of the sporting fraternity generally, and has given entire satisfaction.

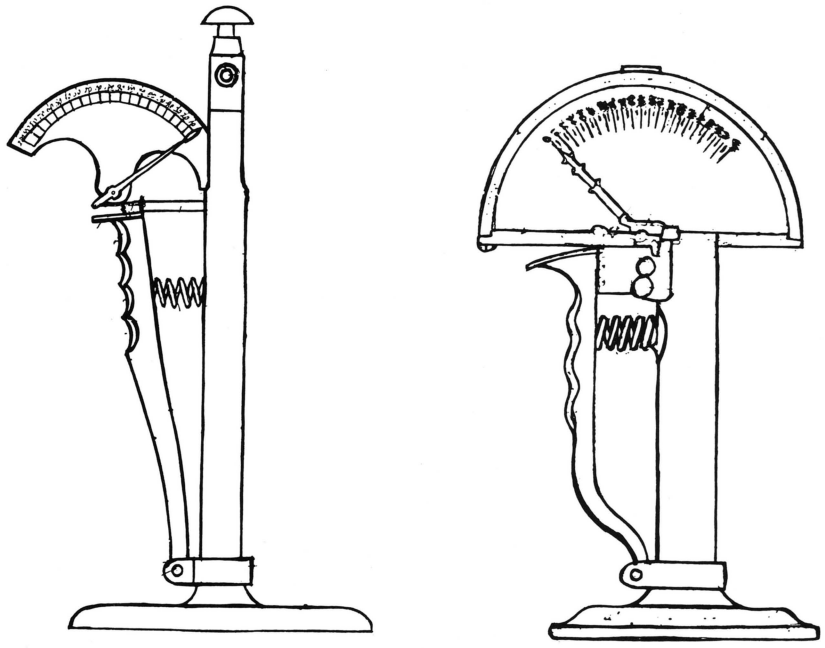
These Spirometers are especially adapted for parlor entertainments, ladies' fairs, festivals, pleasure grounds, museums, hospitals, recruiting offices, armories, gymnasiums, clubhouses, fire departments, hotels, saloons, workshops, etc. They are put upon the market at the lowest possible figure, consistent with a fair profit to the manufacturer and dealers, in order that no family or house who can afford it shall be without one.

Price, No. 1, patent gong, ornamented, &c.....$30 00
" No. 2, without gong, ornamented... ..... 20 00

PECK & SNYDER, Gen'l Agents, 128 Nassau St., N.Y.

The non-coin STANDARD LUNG TESTER created by New Yorker George Hall primarily for the saloon trade was in the 1886 Peck & Snyder novelty goods catalogue. It led the way to American coin-op machines. Bueschel Collection.

wake of the successful coin–operated scale. These were strength, grip and lung testers, electric shocking machines and fortune tellers. The machines were crude affairs, depending on their initial novelty for drawing-power. Like the first coin–phonographs, occasional machines found their way into saloons and railroad stations, but their American production was slowed by the Depression of 1893. Most of the devices were sold outright to location owners, who frequently junked the machines when they went out–of–order too often."[43] 1886 was the year that the American amusement coin machine industry really got started, and you could see the turn in technology from non-coin bartop entertainments to coin-ops in that single year. The New York City sporting goods, indoor pastimes and toy house of Peck & Snyder located at 128 Nassau Street, sat at the crest of the turn. Long a supplier to saloons of competitive bartop games, the firm's 1886 catalog carried Hall's STANDARD LUNG TESTER, a non-coin spirometer invented by George W. Hall of New York in January of that year, described as "...especially adapted for parlor entertainments, ladies' fairs, festivals, pleasure grounds, museums, hospitals, recruiting offices, armories, gymnasiums, club-houses, fire departments, hotels, saloons, workshops, etc."[44] Looking back, that seems to be a strange mix of locations for what was primarily a saloon amusement, yet it seemed to work at the time. The catalog even noted that one resided in the offices of the *The National Police Gazette* "...to register the lung capacity of the sporting fraternity generally."[45] Not included was another non-coin competitive device created later the same year that would set the pattern for coin–op development. The Peck & Snyder HAND GRIP TEST, patented in 1886, quickly found its way into other saloon equipment supply catalogs to become one of the most popular bar games in the country.[46] And when its coin-operated development came alone it may have been one of the most popular in the world, for it was Britisher Percival Everitt who made the change in his 1888 GRIP TESTER. He may have seen the original device while he was in the United States in 1886 and 1887, emulating the game as he had done with British pub machines in London. But the turn was in, and the HAND GRIP TEST and its descendents may have been the last of the major non–coin physical test machines to be converted to coin-ops, as well as the last of the American ideas to inspire British advancements. By the closing months of 1886 the change was evident with indigenous American saloon machines, as well as improvements of the imported British machines, becoming the established pattern.



The Peck & Snyder non-coin HAND GRIP TEST of 1886, left, may have led to Britisher Percival Everitt's coin-op GRIP TESTER, right, of two years later. Everitt was a frequent visitor to the United States from 1885 until his death in the early 1890s. Bueschel Collection.

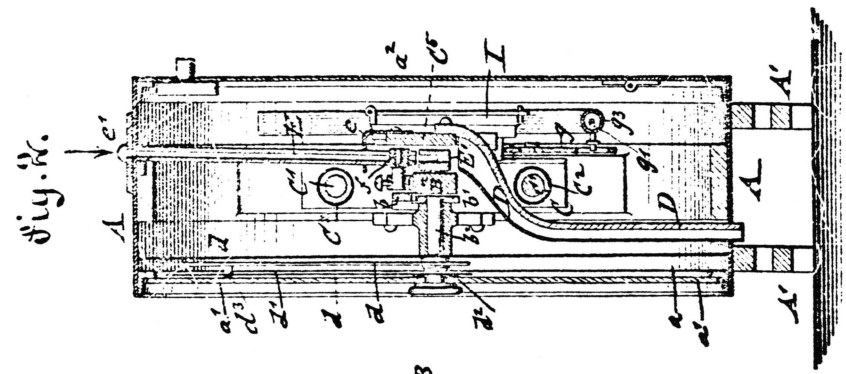
The machine that led the parade of devices that would ultimately create the arcade class of athletic and physical test coin machines was an electrically powered floor standing lifting machine shamelessly based on Percival Everitt's original coin operated scale, both by structure and by maker. When Everitt brought his scale idea to the E. & T. Fairbanks and Company in St. Johnsbury, Vermont, in 1885, selling the idea to what was then one of the largest manufactories in the United States, the Fairbanks brothers immediately sought a way to get around the Everitt patent and enhance their profitability by controlling any extension of their commitment to produce a small number of the machines. The solution was to hire an outside inventor to spin out some advanced developments while opening a new company under a different name to produce them. The man they picked was Edwin Ruthven Whitney, of Manchester, New Hampshire, an experienced practitioner in the exotic new industrial art of electricity. Whitney was working at the Forsaith Electric Machinery Company in Manchester, a manufacturer of circular saw mills, when Horace and William Paddock Fairbanks made an offer he couldn't refuse. Whitney set to work on a series of machines, including a coin operated electrical lifter and and elegant and completely new approach to an electrical coin-controlled scale. The lifter was completed first, in the summer of 1886, and the Fairbanks brothers lived up to their part of the bargain in October by setting up the Standard Electric Company of Vermont in St. Johnsbury, with Whitney a major stockholder and director.[47] The firm's first product was Whitney's ELECTRO-THERAPEUTIC STRENGTH–TESTING MACHINE followed the next year by the scale. Whitney's patent on the electrical lifter sounded much like Percival Everitt's patent on a similar all mechanical device in England only a month earlier, stating: "My invention has reference to the machines; used to indicate, as the number of pounds weight lifter by a pull, the weight of impact of a blow, etc., and it consists in combining with

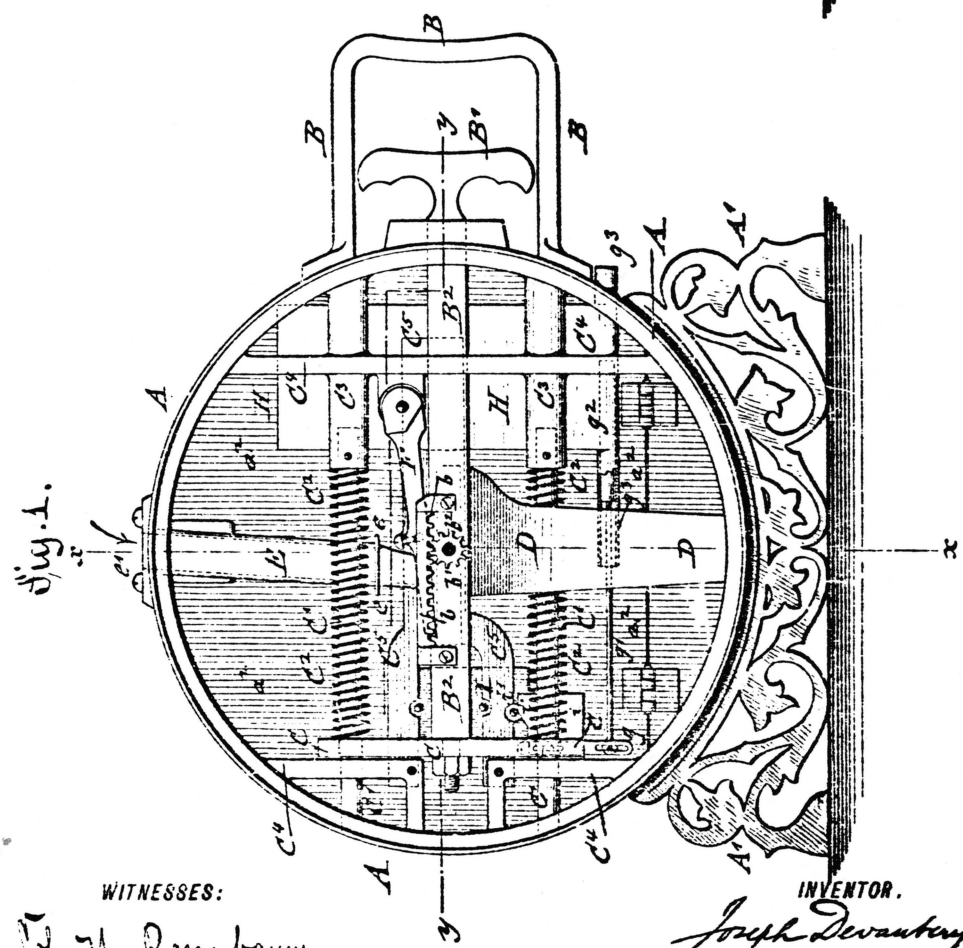
(No Model.) 2 Sheets—Sheet 1.

J. DEVANTERY.

COIN CONTROLLED STRENGTH TESTING MACHINE.

No. 385,921. Patented July 10, 1888.





WITNESSES:

E. M. Rosenbaum

Geo. Gaines.

INVENTOR.

Joseph Devantery.

BY Cooper & Dayton

ATTORNEYS.

A cleaned up version of Ferdinand Mosser's HAND POWER TEST CIGAR MACHINE, the Hand Power Test Machine Company's HAND POWER TEST gripper of 1888 was developed by Brooklyn machinist Joseph DeVantery. He later produced it in his own shop. U.S. Patent Office.

such mechanism a source of electricity, by which a current is, when the machine is operated (when the coin is introduced), sent to the operator, the strength of the current being proportioned by the force exerted by him, and automatically registered in like manner."[48] The therapeutic part of the ELECTRO–THERAPEUTIC et al was the fact that the players got a jolt of electricity through the machine's handles just as they started lifting. Thus the American athletic and physical test arcade machines got their start with a shock while their creator, Edwin R. Whitney, suffered the ignobility of being lost to the history of the industry.

Things happened fast after that. The first indigenous American physical test and competition machine made its initial appearance in April of 1887, to remain a viable saloon coin machine format for many years to come. Called the HAND POWER TEST, and created by a New York City machinist named Ferdinand Mosser, the players got something for their money every time they dropped a coin and tested their strength on a hand pull. Except there was some confusion about who those players might be. Perhaps an attempt was being made to camouflage the competitive gambling aspects of the machine, or equally the producers really believed in the widespread location potential of their device. Whatever, it was described as "...an entertaining device to be used in parks, expositions, restaurants, railway-stations, etc., the storage receptacles being filled with cigarettes, cigars, or similar articles when the machine is to be used by grown people, or with chocolate, candy or other articles when arranged for the use of children at sea side resorts and the like."[49] Virtually all of the primary locations for arcade type machines were listed except the one where the device actually ended up, the saloon. And there was no way a child would have moved the hand drip test on such a sturdy bartop cast iron cabinet. The fact is that the HAND POWER TEST CIGAR MACHINE model that dispensed a cigar after every coin-fed pull became a saloon standard, produced in Brooklyn by the Hand Power Test Machine Company of New Jersey, with the firm established on paper across the Hudson River, where the business taxes were lower. Joseph DeVantery, the Brooklyn machinist in whose shops the machine was being built, cleaned up the design and working mechanism considerably the next year, removing the vending system to make it a straight physical test competitive machine.[50] Eventually the Hand Power Test Machine Company was dissolved, with its New York City offices closed, moving everything to the already established J. DeVantery Company at 385 Kent Avenue in Brooklyn where the new model was produced in both bartop and standing cast iron pedestal styles. Success with his version of the HAND POWER TEST led to a move to larger quarters in 1891, with the firm regarded as an up and coming company in a new field led by an enterprising man: "Jos. DeVantery, machinist, tool and die maker, Nos. 23 and 25 South Sixth Street...is a man in the full prime of life, active and energetic. He was born in France and has been in this country a number of years. He started in business in 1881 on Kent Avenue, and removed to the present place in 1891. Here he has a spacious and well-equipped shop with ample steam–power, improved lathes, planers and all needed appliances, and employer 12 to 15 skilled mechanics. Mr. DeVantery builds special and automatic machinery...and his productions are in extensive use throughout the United States, Canada and South America."[51]

DeVantery continued to produce the machine into the 20th Century, through climbing, Depression and declining markets as the fortunes of the American saloon flowed and ebbed while the forces of Temperance gained ground. The machine idea was also picked up by fellow Brooklynite Peter Beetz, one of the first big names in



The first widely promoted American-made arcade type machine, the AUTOMATIC ELECTRIC BATTERY of September 1888, was a second generation version of the February 1888 AUTOMATIC BATTERY of the Automatic Battery Company in Brooklyn. The machine brought the Roovers brothers — Alex and Al — into the coin machine business working for an established Percy G. Williams, with the first AUTOMATIC BATTERY produced in 1887. Bueschel Collection.

(No Model.) 3 Sheets—Sheet 1.

P. BEETZ.

GRIP TESTER OR SIMILAR COIN CONTROLLED DEVICE.

No. 394,812. Patented Dec. 18, 1888.

Fig. 1.

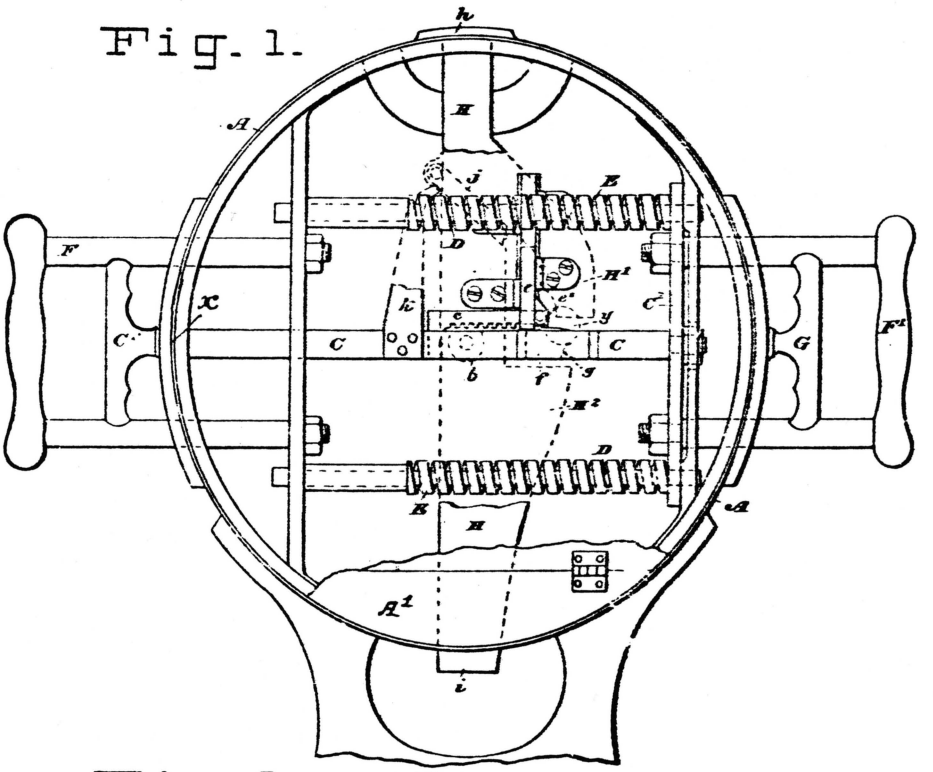
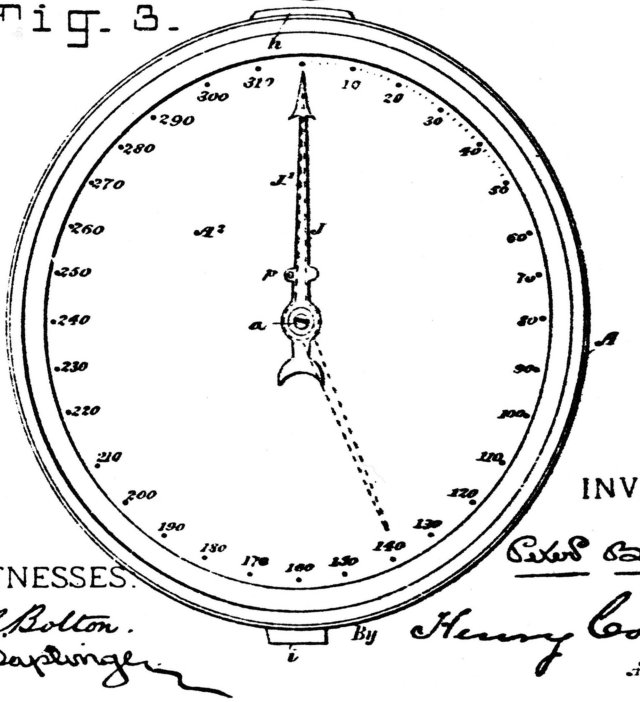


Fig. 3.



INVENTOR:

Peter Beetz.

WITNESSES:

E. B. Bolton.

J. L. Springer

By Henry Connett

Attorney.

Two-handed version of the HAND POWER TEST created by Peter Beetz of New York City as his STRENGTH TEST, April 1888. Later models of the machine were produced in quantity into the first decade of the 20th Century. U.S. Patent Office.

Samuel Nafew Co., 392 Broadway, New York, and 167 Dearborn Street, Chicago.

The Improved Automatic Roulette.

A Perfect Miniature Roulette Wheel.

Size, 13x7 inches. Weight, 2 lbs.

When the nickel is placed in the slot and the handle is pressed, the wheel is rapidly revolved, which at the same time throws the ball at a high speed, after which the ball will fall into one of the numbered holes.

THE REWARD CARD

shows what the player is entitled for CIGARS, DRINKS, or whatever you choose to pay out. *It is doubly fascinating*, as it appears so easy to win. It is one of the handsomest machines ever made. The case is made of highly polished, decorated nickel-plated metal and warranted not to get out of order. The machine can be altered in a few seconds to work either with a cent, nickel or dime, and can be re-changed again. Combination set of Reward Cards with each machine. One of the most interesting and exciting of Slot Machines.



Price only $6.00.

Automatic Lung Tester.

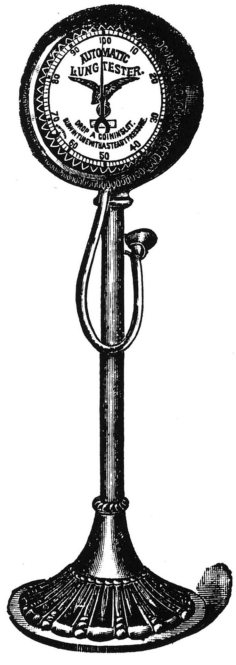
Nearly every one who sees this machine tries it to see how much they can blow and after using it once they try it again and again. A bell rings when it is blown up to 65, and many wagers are made as to who can ring it. Every time it is tried a coin must be put in the slot or it will not operate, and the moment it has registered the blow the coin drops into the money box and the machinery is automatically locked until another coin is deposited.

It is really wonderful how much money this machine will take in, in any place where men congregate, five to ten dollars a week being the average for good places.

DIMENSIONS: The automatic Lung Tester is made entirely of metal, no wood being used in its construction. It weighs 50 pounds, stands 4½ feet high, and takes up a floor space of 15 inches square.

PRICE $15.00.

Adjusted for pennies or nickels.



The AUTOMATIC LUNG TESTER was produced in Brooklyn at the Percy G. Williams plant starting in December 1888. The machine was created by Percy G. Williams and Alfred W. Roover. The dial was virtually a duplicate of that on the AUTOMATIC ELECTRIC BATTERY. Bueschel Collection.

American arcade machines, in his STRENGTH TEST machine of April 1888. Beetz put grip handles on each side of his machine — DeVantery only had one, on the right side — so that the player was using both hands at once. In effect, the STRENGTH TEST was a sideways lifter (which is pulling weight, the exact opposite of pushing it) which Beetz reversed in order to also build a WEIGHING MACHINE version. Both machines were on a standing pedestal, with the scale on a platform.[52] Beetz further strengthened the coin process, making the nickel a mechanical block, or part of the mechanism, and improved the pointer dial in a bartop version in December 1888, eschewing the weighing version as scale technology had by now progressed well beyond the Beetz approach.[53] The new machine was called the "Push-Pull" MUSCLE DEVELOPER and remained in production for a dozen years or more at the Beetz shops at 143 to 147 E. 23rd Street in New York City, with the firm becoming known as the Automatic Novelty Company in the process, although Peter Beetz remained an alternative by-name. The firm survived into the teens of the 20th Century making a broad line of physical test coin machines, first for saloons and then widely accepted in the new dedicated arcade locations of 1904 and thereafter.

The first American arcade type machine to be widely promoted came next. Loosely based on Britisher William S. Oliver's AUTOMATIC BATTERY of 1886 and coming out over a year before Oliver's August 1887 TALKING ELECTRIC BATTERY and Percival Everitt's February 1888 ELECTRIC SHOCK TESTER, the American AUTOMATIC BATTERY was made by coin machine pioneer Percy G. Williams of Brooklyn. It's genesis was actually the year before, when Williams created and patented a galvanic, or shocking, battery in September 1885, quite likely making the coin-operated electric shocker an original American contribution to the arcade art.[54] Williams proceeded to completely blanket the patented coverage of the coin operated shocker by applying four or more patents — three original and one re-issue — within the next three years.[55] While the early models of the AUTOMATIC BATTERY were made by the Percy G. Williams Company, located at 44 Flatbush Avenue in Brooklyn, the later AUTOMATIC ELECTRIC BATTERY machines were made by the Automatic Battery Company at the same address, a separate corporate entity dedicated to the development and production of the firm's most successful product. The new corporation was established early in 1888 with Williams as its chairman, holding half of the issued shares while others held no more that 5 percent each, in order to manufacture and operate the machine, as well as sell production rights.[56] The version made by The Automatic Battery Company carried a cast iron "ABC" logotype in the middle of its filigree legs, a highly visibility footprint of its origins, a disparate approach to machine identification at a time when manufacturer's names were rarely seen in order to allow selling agents to slap their own nameplates on their products to appear to be the maker. The AUTOMATIC ELECTRIC BATTERY ended all that, with many of the newer products to come proudly proclaiming their origins, although other firms — not the least of which was P.G. Williams — preferred to remain anonymous for the sake of their agents.

Maryland born Percy G. Williams, of an English immigrant father and Irish mother, was barely 31 years old at the time of the formation of The Automatic Battery Company, an adjunct to his already successful P.G. Williams firm. In addition to solidly placing the center of the primordial American coin machine industry in the borough of Brooklyn, Williams brought two of the greatest geniuses in the field to the industry. Draftsman, designers and tinkerers in the true tradition of creative inventors, the brothers Alexander H. and Alfred W. Roovers got their start with Williams, being in on the develop-

ment of the AUTOMATIC BATTERY and other Williams products from the very beginning. The Roovers brothers had started out as machinists and tool makers in a small shop close to the Brooklyn Navy Yard, fiddling around with coin machines and other non-coin mechanical projects with enough ingenuity to attract the attention of Williams.[57] The union of the clever bothers and the pragmatic industrialist led to an issuance of some of the most interesting public amusements of the day, going a long way toward popularizing the coin operated machine and making it a part of every day saloon life. The next machine from the group — this time P.G. Williams and Alfred W. Roovers — become an instant bar-



The Percy G. Williams AUTOMATIC DONKEY represented the Democratic Party in the national election year of 1892. It was developed by the Roovers brothers, who were about to go off on their own as coin machine producers. Gil Shapiro, Urban Archeology.



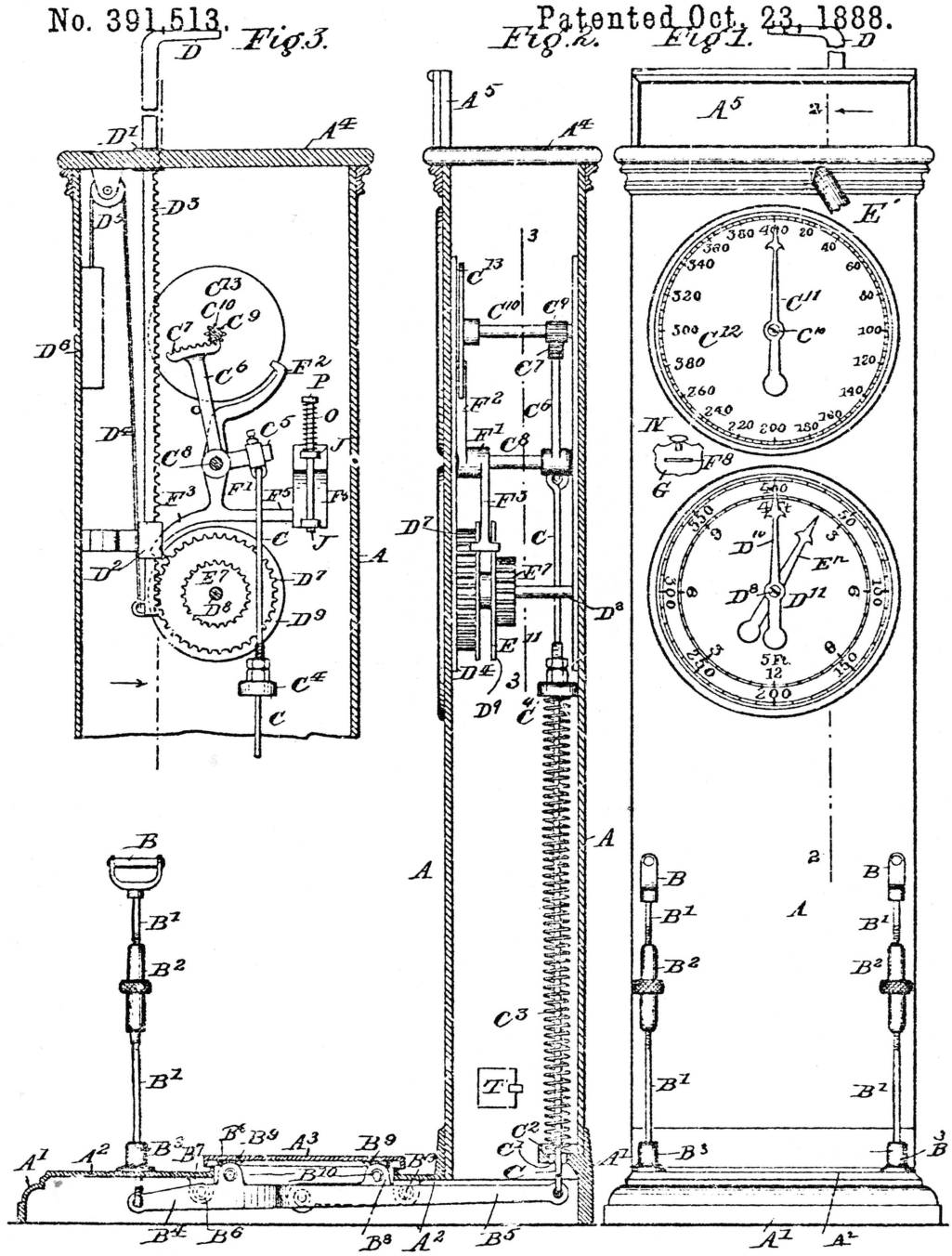
The Pope shocker patent as applied to the National Electric Machine NERVE INVIGORATOR of a decade later. A National scale cast iron base is used as a cabinet for the standing shocker. This machine is serial number 5003. Photo is original factory record shot. Bueschel Collection.

(No Model.) 3 Sheets—Sheet 1.

E. J. COLBY.

COIN CONTROLLED MACHINE FOR WEIGHING, LIFTING, LUNG TESTING, AND HEIGHT MEASURING.

No. 391,513. Patented Oct. 23, 1888.



A blaze of coin-op invention in a single machine, the Edward J. Colby COMBINATION TESTING MACHINE of November 1887 was often an embarrassment to use as players couldn't fathom all of the features. Producer was the Colby International Manufacturing Company located in Chicago. U.S. Patent Office.

(No Model.) 2 Sheets—Sheet 1.

W. R. POPE.

COIN OPERATED INDUCTION COIL.

No. 374,495. Patented Dec. 6, 1887.

Fig. 1.

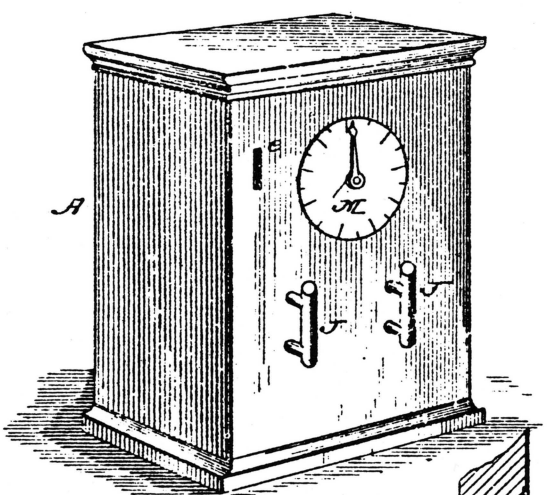
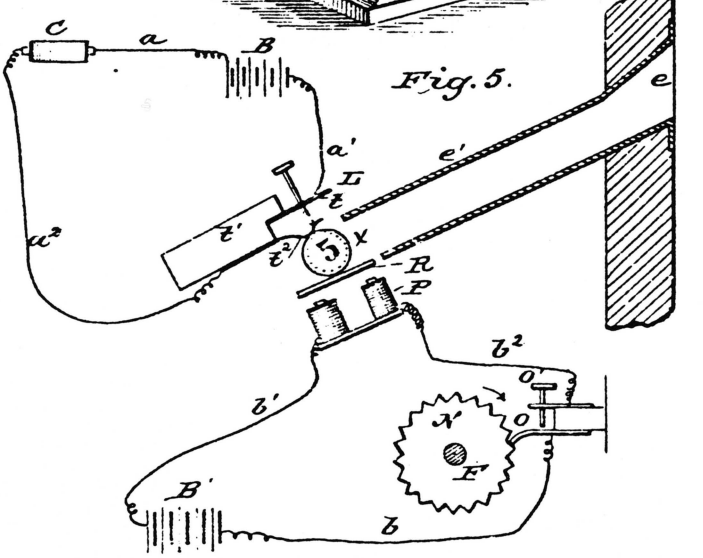


Fig. 5.



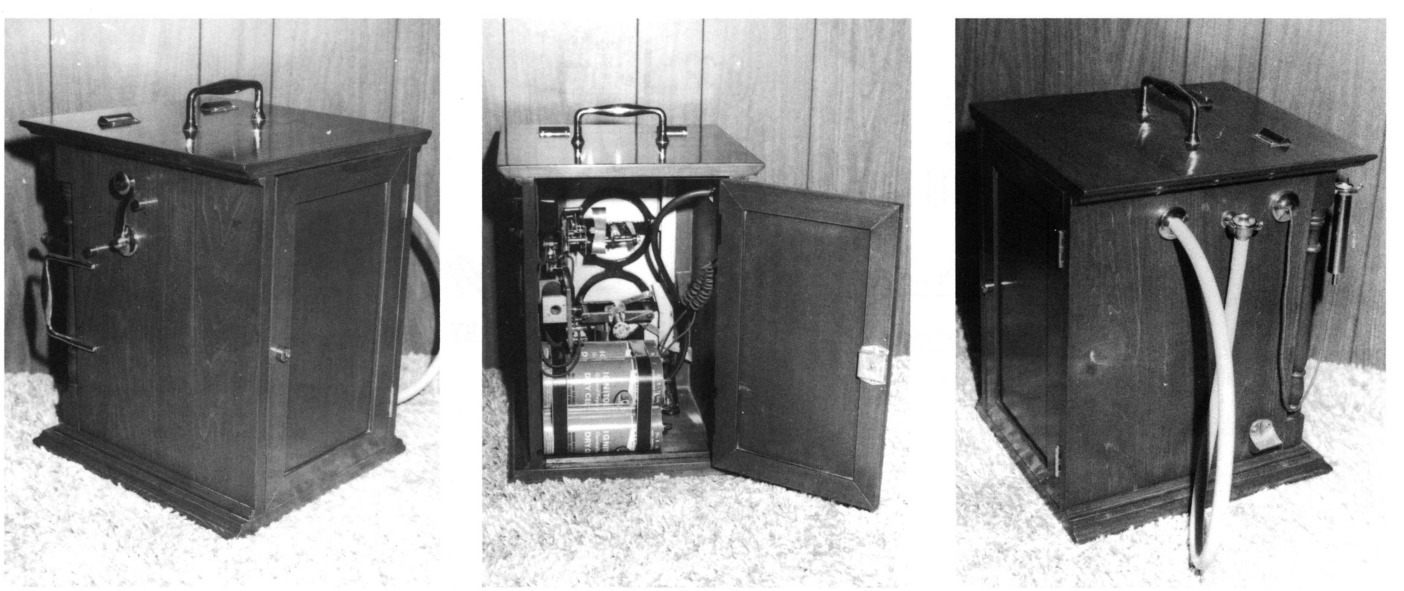
WITNESSES:
Fred G. Dieterich
Edw. H. Ryan.

INVENTOR:
W. R. Pope
BY Munn & Co
ATTORNEYS.

The beginning of the bartops. The summer 1887 William Riley Pope shocker set the pattern for most countertop models to follow. Production was by Pope's National Electric Machine company in New York City. U.S. Patent Office.

room standard. Starting with a dial virtually identical to the AUTOMATIC ELECTRIC BATTERY, this time the physical testing was of the capacity of the lungs with the dial pointer advanced based on the air pressure in a blowing tube.[58] Called a spirometer in its patent after the British style, the machine name followed in the path of the prior shocker to become known as the AUTOMATIC LUNG TESTER. Introduced in December 1888 — the year that some of the most significant monuments in the world were raised above the limits of the past, with Chicago's Tacoma building using a steel load-bearing skeleton for the first time to lead the age of the skyscraper, while Eiffel's wrought-iron Tower was beginning to take shape over Paris, France, and the Washington Monument in America was completed as the world's tallest masonry monument after a fitful 49 year history of construction — by the summer of 1889 the Williams machine had proven its mettle. An advertisement in the nation's leading saloon journal, *The National Police Gazette*, called the AUTOMATIC LUNG TESTER "The Latest and Best 'Slot Machine'..to work either for a 5–cent nickel or a penny," and they went on to describe the impact of the machine on both players and locations. "Nearly every one that sees the machine tries to see how much they can blow. In any good place the machine will take in $5 to $10 per week. A bell rings when it is blown up to 65, and many wagers are made as to who can ring it. This brings big money to the proprietors of saloons and cigar stores, in addition to the actual receipts of the machine. Over 1,600 persons tried the AUTOMATIC LUNG TESTER at the last walking match at Madison Square Garden — over 500 persons try it every week in Charlie Johnson's place in Brooklyn. The machine at Geo. Bader's Road House, outside of Prospect Park, Brooklyn, averaged over $12 a week. The complete machine will be sold for forty dollars ($40) and in any ordinary place it ought to pay for itself in a very short time. You can't invest $40 better than this; all you take in is clear profit, and the machine is an ornament and attraction to your place."[59] With all the changes in the world since then it is remarkable to see how little coin machine advertising has changed over the last century, for barroom location machines are still being sold in much the same way today.

Next came the P.G. Williams AUTOMATIC STRENGTH TESTER, a tall floor standing punching and kicking power tester first invented by the Roovers brothers in June, 1889, and later produced by them in an improved version for their own customers, to be followed by an attempt by Williams to capture the pseudo-medical market with an electric belt which he called a "Galvanic Apparatus for the Human Body."[60] But it was Williams' next product that led to the greatest change in the firm's product lines. Returning to the age-old concept of mechanical simulations of living things, Williams and Alfred Roovers created an exceedingly clever articulated model of a monkey that free threw a pair of dice for either a fortune or a reward such as a free drink — a dual award card assigned specific fortunes or wins an losses to each possible numerical total of the toss — once a coin was played. Called the AUTOMATIC MONKEY, it was described in its December, 1889 patent application as a machine that "...consists essentially of a (clockwork) motor mechanism controlled by a coin receptacle, a movable table or platform, a monkey having one arm movable for the purpose of alternately tilting the table and returning it to a horizontal position, and another arm having the dice box and movable to shake the dice within the box, subsequently empty the box over the table and finally hold the box below the table so that upon the tilting of the table the dice will drop back into the box," ready to play again.[61] Williams had come full circle and, after creating a field full of basic physical test machines, had come back to the origins of the industry, that of lifelike simulations. Only now chance taking, gambling and fortune telling aspects had been added to what had basically been exhibition machines. The high point in the P.G. Williams direction was reached in 1892 when Roovers-inspired AUTOMATIC ELEPHANT and AUTOMATIC DONKEY fortune tellers were introduced in that election year. It was an emotionally charged campaign that pitted incumbent Republican Benjamin Harrison against gold standard supporters of Democrat



The standard equipment of a generic "Colby" includes lung test tube, left; battery power, center; and shocker lever, right. The level of electricity is controlled by the player. Bill Whelan Collection.



A Colby Testing Machine Company TESTING MACHINE on location at far right, in the Hannah and Hogg saloon at Clark Street and North Avenue in Chicago. The year is 1889. View is from the bar room looking into the billiards room. Alexander D. Hannah was a principal in the Colby firm, and the financial backer of the machine. Chicago Historical Society.

(No Model.)

E. J. COLBY.

COIN CONTROLLED ELECTRIC COIL.

No. 445,220. Patented Jan. 27, 1891.

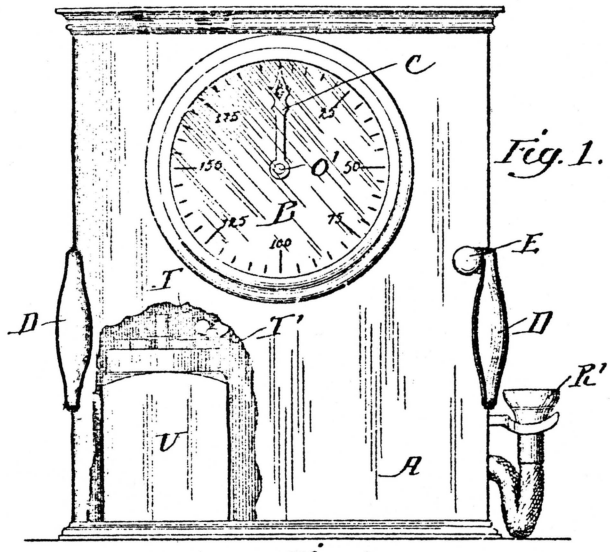


Fig. 1.

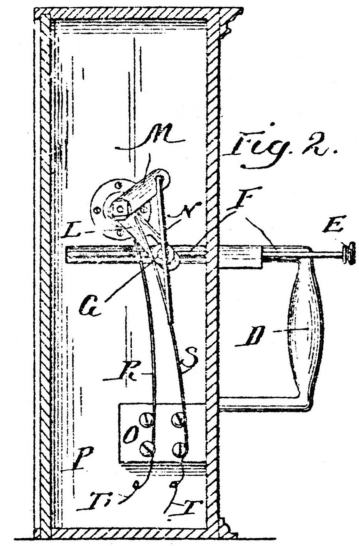
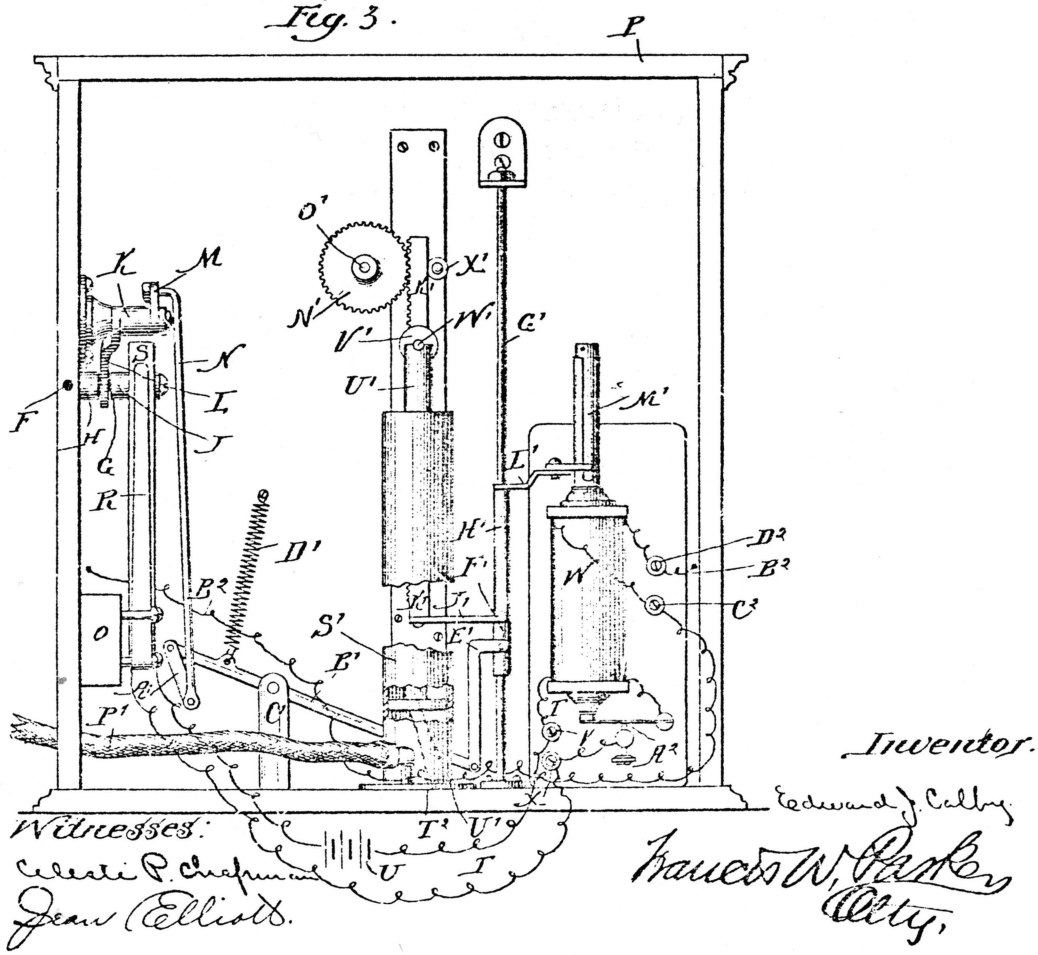


Fig. 2.

Fig. 3.



Inventor.

Witnesses:

Celeste P. Chapman

Jean Elliott.

Edward J. Colby.

James W. Parker

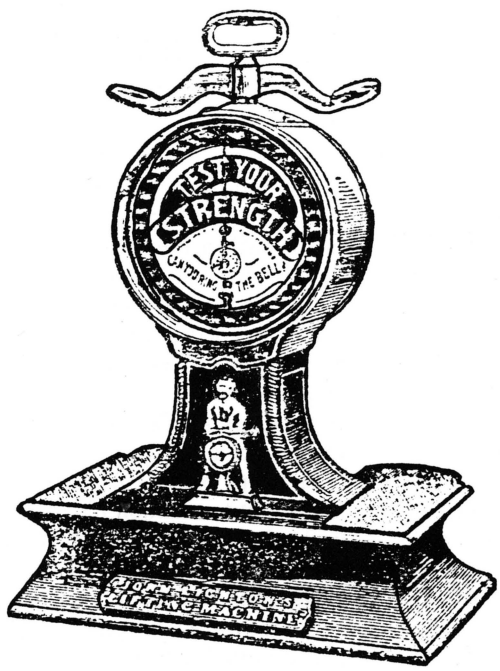
Atty.

The Colby interpretation of the bartop shocker, adding a lung test feature. This combination machine was produced by the Colby Electrical Specialty Company of Chicago as the COMBINATION BATTERY starting in October 1889, and by a variety of other producers for a dozen years or more. Patent No. 445,220 was issued on January 27, 1891. U.S. Patent Office.

Grover Cleveland and his running mate Adlai Stevenson, with a reformist third People's Party on hand to split the vote. The Williams machines represented the elephant of the Grand Old Party — the Republicans — and the Democrat donkey. Cleveland won by a popular vote squeak, to immediately face the greatest economic Depression in the nation's history up to that date. The Wall Street market collapsed on June 27, 1893 after a series of ups and downs, European investors pulled their money out of the United States, and 15,000 businesses failed in a Depression that literally sank the embryonic coin machine industry. In October Congress put the nation back on the gold standard, but it would take four more years before the economy would get back on its feet. Meanwhile, P.G. Williams dropped out to become a manufacturer of "electric appliances," in actual fact a quack medicine electrically charged belt, while the Roovers went off on their own.[62]

While P.G. Williams was making his run to become the most prolific producer of amusement coin machines under the sun, much was happening elsewhere in the new industry. The shocker was first in line for a rapid series of developments after the AUTOMATIC BATTERY, with the next approach taken by a profuse producer of early coin-ops named William Riley Pope, of Baltimore, Maryland. Starting with the shocker, Pope put his hand to physical test, trade stimulator, photographic and vending machines made by a variety of New York builders. Pope's most enduring dedication was to the shocker, making his first "Coin-Operated Induction Coil" in the summer of 1887.[63] The format was that of a bartop box with a dial and two grip handles, a classic style that would be repeated time and again by countless shocker producers. Pope made improvements with his ELECTRIC MACHINE of April, 1888 and IMPROVED ELECTRIC MACHINE of August, 1892, all in much the same basic format — although the 1892 version had grip knobs on the sides — all of them produced by his own National Electric Machine Company in New York City, with Pope ultimately moving to New York to be close to his projects.[64]

Joseph W. Hazell, a Baltimore coin machine colleague of Pope's, picked up the bartop idea but made the gripper a single horizontal bar in a cabinet with a much simplified coin machine mechanism.[65] His January 1888 shocker, along with the Pope machines, led directly to the EXCELSIOR, a November 1890 development by William H. Ashwell of St. Louis. In Ashwell's machine the batteries used to give the shock also provided the electrical power needed by magnets to measure the thickness and content of the played coin, thus becoming an early coin acceptor.[66] The EXCELSIOR was produced by Ashwell's The American Excelsior Automatic Supply Company at 903 Olive Street in St. Louis for a few years, ending with the Depression



JOHN LIGHTON'S LIFTING MACHINE

DESCRIPTION OF MACHINE.

This machine is built of the very best material to be had. The base and cash box are of iron, thereby being heavy and strong enough to stand without being screwed to the floor. The drum and handles are made of the best quality of brass, heavily nickeled.

THE MACHINE has a bell that rings when five and fifteen pounds are lifted on it. The extreme length of the machine is twenty-six inches by fifteen and one-half in width, and the height to top of the drum is thirty inches.

The handles can be adjusted to any height by simply screwing them up or down. It is one of the most reliable and ornamental devices in the market for testing the strength and developing the muscles.

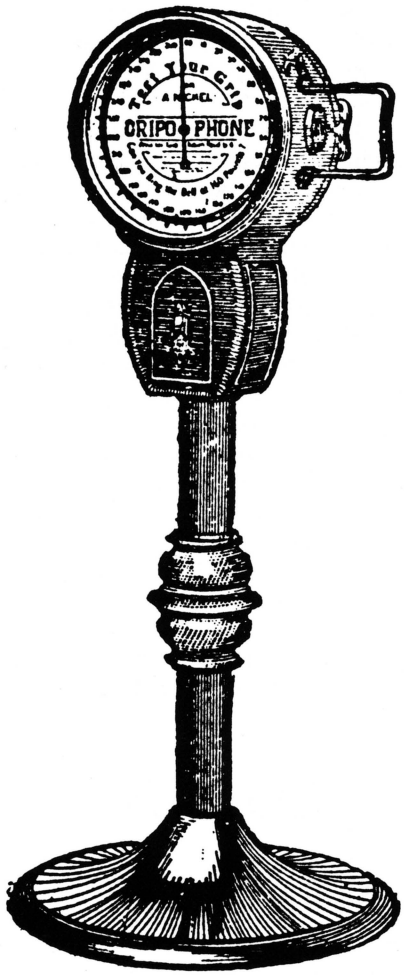
DIRECTIONS FOR OPERATING THE MACHINE.

Place a cent in the slot at the top of the machine, then, after standing upon the checkered foot places at the base, grasp the handles and lift upward as high as possible. The index hand, or pointer, will remain and indicate the amount lifted, and after examination, can be brought backward to zero by pressing the button on top of the machine. Be sure that the index hand is at zero before lifting. The machine automatically locks itself against operation after each lift, and can only be operated upon the insertion of a cent.

☞This machine is the best paying automatic device yet invented. **Price, $40.00.**

The most popular saloon coin-op of its day, the JOHN LIGHTON'S LIFTING MACHINE of 1892 was the ultimate model of a line of Lighton lifters that began with the TEST LIFTING MACHINE of 1888. Bueschel Collection.

B. A. STEVENS, TOLEDO, OHIO.



The Lighton Grip Machine.

The Lighton Grip Machine, as shown in the cut, is a very ornamental device for testing the strength or grip of the hand. It takes up but little room, being but twenty-four inches in diameter at its base and standing forty-four inches high.

Description of Machine.

The base and cash-box are made of iron, and are so heavy that it is impossible for the machine to tip over. They are heavily japanned and neatly ornamented with silver and transfer flowers.

The drum and handle are made of the best quality of brass, heavily nickled. The dial is enameled and registers from one to three hundred pounds. This machine contains a bell that rings when one hundred and sixty pounds are gripped on it.

Directions for Operating the Machine.

Drop a nickel in the slot at the top of the machine. Now place the hand so that the outer handle is between the thumb and fingers, then with the fingers grasp the small handle and grip as tightly as possible.

The index hand, or pointer, will remain and indicate the number of pounds gripped, and after examination can be brought back to zero by pressing the button just above the handle. Be sure the index hand, or pointer, is at zero before gripping. The machine automatically locks itself against operation after each grip, and can only be operated on the insertion of a nickel.

Price each.....$50 00

The John Lighton Machine Company GRIPO-PHONE illustrated and described in the spring 1893 B. A. Stevens saloon equipment catalog. The GRIPO-PHONE is a rehashed version of the DeVantery HAND POWER TEST made in Brooklyn five years earlier. Lighton was located in upstate Syracuse, New York. Bueschel Collection.

of 1893 after which much of the coin machine industry either started in or moved to Chicago.

The Chicago connection with coin machines started early. Prior to its disastrous fire of Sunday night and Monday morning, October 8 and 9, 1871, which destroyed 17,500 buildings and left almost a third of the city's somewhat over 300,000 population homeless, Chicago had already earned a position as one of the leading business centers in the country. The railroads did it. The growth of commerce and the settling of the midwestern farm lands and the winning of the far west made Chicago the hub of Great Lakes and westward (and eastward) bound rail traffic. The worldwide publicity given to the fire, and Chicago's rapid re-birth from a Jerry (meaning railroad laborer)-built community of wooden buildings to a modern brick and stone city, attracted worldwide attention as well as people. That quickly included industry. With access to markets, nearness to raw materials and an "I Will" philosophy (the city's motto), growth boomed. The population topped half a million in 1880, and went over a million by 1890. While its basic industries were grain, lumber, live stock and packed meat (in which it led the world), metalworking and machine building soon edged in to become a major contributor to the city's wealth. It was just this combination of markets and materials that attracted 24 year old Richard W. Sears to the city from Minneapolis in 1887, where he hired watchmaker Alvah C. Roebuck and launched his club demonstration and mail order sales of pocket watches. In less than a decade this decision would have profound effects on Chicago's transportation systems, post office, manufacturing industries, including the makers of coin machines, and labor force.

1887 was also the year that a commanding figure in the history of coin machines entered the field in Chicago. Edward J. Colby had arrived in the prairie city from a highly industrialized Cincinnati in 1885, already experienced in invention and manufacturing. A Renaissance man of producible ideas, in a stunning ten-year performance that even exceeded the scope of the nation's premier inventors, who generally concentrated on a small list of primary approaches — Edison's work in electricity, for instance — Colby snagged over thirty patents in almost as many fields, not to mention his many applications that didn't bear fruit. Between 1885 and 1894 he received patents on locks; time recorders, toy banks; a kite; pneumatic bell; umbrella; a toy train that doubled as a bank, opening wide once a certain weight of coins was reached; building ventilators; an electric alarm clock; inkwells; milk cartons; a gas regulator; hotel annunciator; thread-protector; a combination stove pipe and ventilator; coffee pot; garter belt for women's skirts; a locking rack for hats and umbrellas and a myriad of other ideas. Squeezed into this array of neces-

(No Model.) 2 Sheets—Sheet 1.

J. G. KEARNEY.

COIN CONTROLLED LIFTING MACHINE.

No. 397,295. Patented Feb. 5, 1889.

Fig. 1.

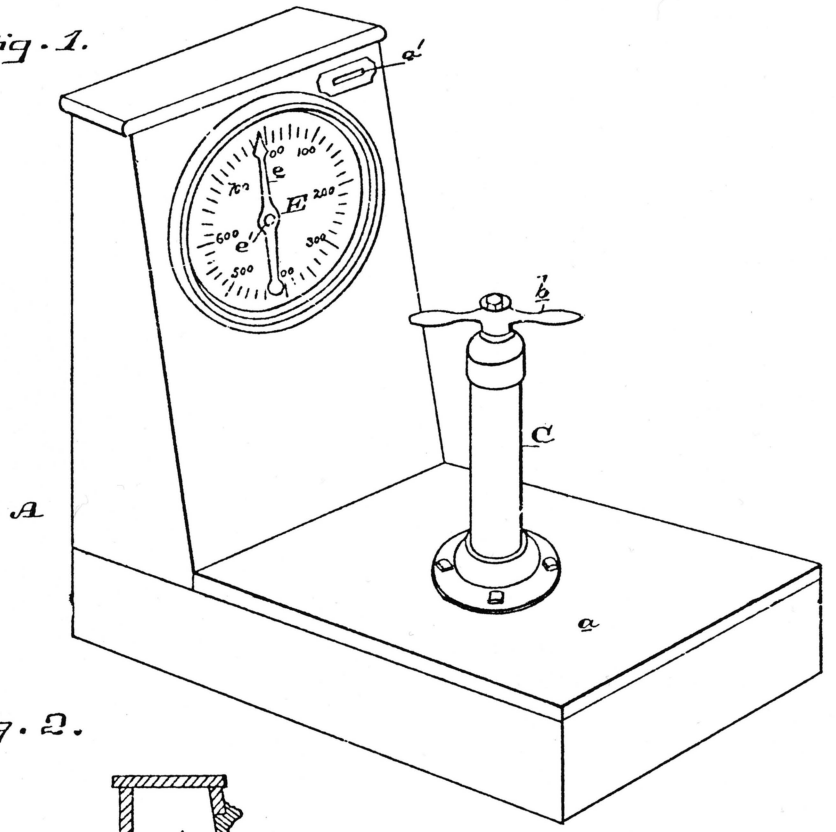
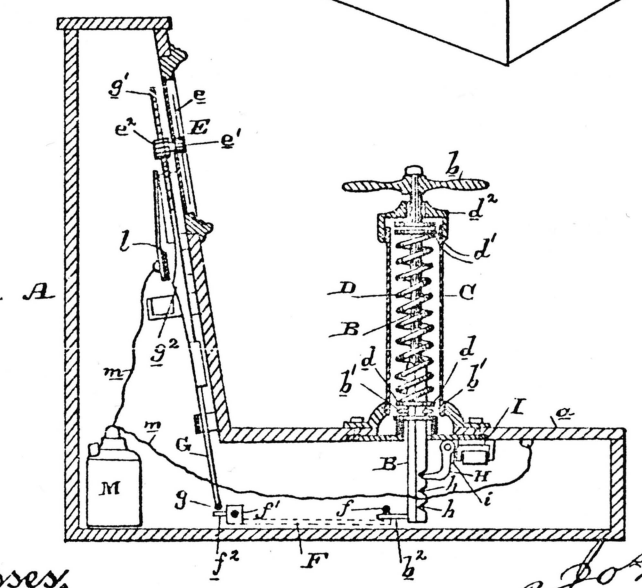


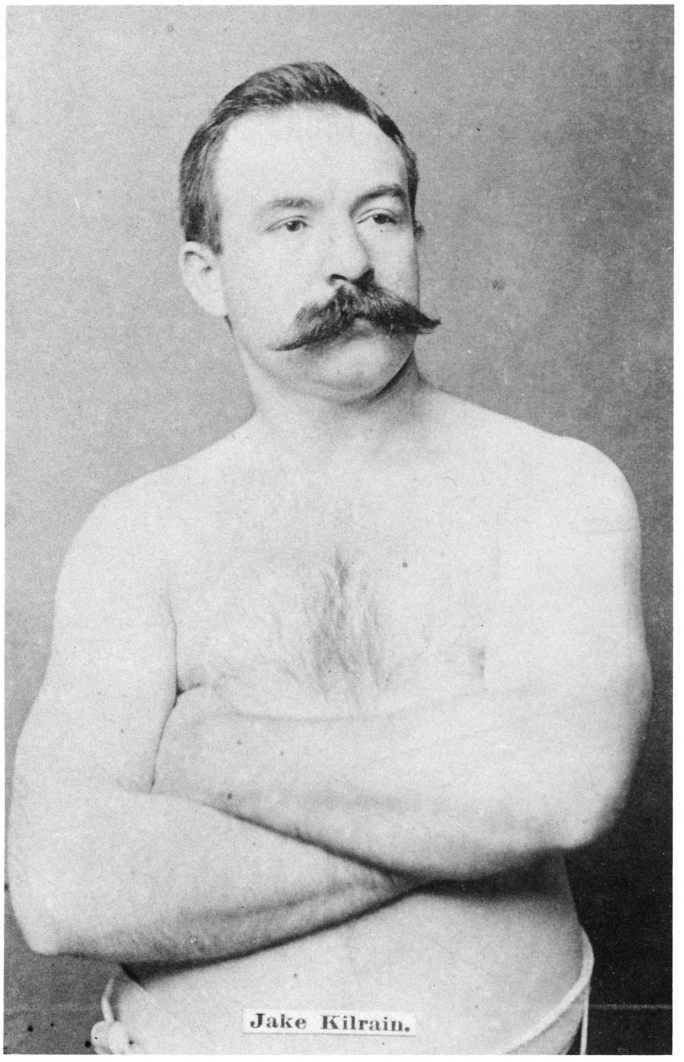
Fig. 2.



Witnesses,
Geo. H. Strong.
J. H. Pourie

Inventor
Jos. G. Kearney.
By Dewey & Co.
Attys

A simplified British Page-style lifter, the LIFTING MACHINE of 1888 was produced by partners William Meakin and J. G. Kearney in San Francisco, California. Inventor Kearney was a saloon keeper. U.S. Patent Office.



Jake Kilrain, favorite of Richard K. Fox, publisher of The National Police Gazette, and the man bested by fighter John L. Sullivan in the last bareknuckle bout of record, Richburg, Mississippi, Monday July 8, 1889. The record setting bout lasted 2 hours and 16 minutes. Bueschel Collection.



"The Great John L." — John L. Sullivan — was the most famed fighter of the 19th Century. More coin machines and mixed drinks were named after Sullivan than any other living man. Bueschel Collection.

sary and entertaining inventions were some of the most sophisticated weighing scale, vending and athletic test coin machines yet conceived.[67]

Starting in 1887, about the time Edward Amet was beginning to work on his coin operated scales in Waukegan, Edward J. Colby was working on a similar device, only he was adding physical test features to his platform weighing. An almost frightening monster of a machine, it was remembered by a contemporary user as "...a scale with side mounts, a grip tester and a height measuring device — three purposes for one coin. Despite the services rendered it was years before people ceased to act from the sense of curiosity. This appeal naturally had the elements of embarrassment to the prospective customer. Willing, even eager, to exercise his gullibility for one definite return, the customer caught in the intricacies of working several devices with which he was unfamiliar simply refrained from making himself ridiculous before friends or others."[68] Complicated though it may have been, one of the first saloon keepers to see it instantly saw it as a money maker, and put up the money to become a partner in its production and placement. Alexander D. Hannah was the Vice President and Treasurer of Hannah & Hogg, a firm founded in 1874 when Hannah and David Hogg each bought half interest in the Thistle, a Chicago saloon at 190 W. Madison Street. In a year or so they had moved their establishment to 188 W. Madison Street. By 1888 the partners had eight locations, tended by "...a force of 100 skilled and experienced assistants...who are expert artists in the science of the business. The handsome and elegant style in which the firm has fitted and decorated its various places is too well known and too varied to herein adequately describe. Suffice to say that neither time nor expense have been spared in making the different resorts attractive and comfortable, and at the same time observing the rules of art and good taste."[69] It was to outfit these locations in the style to which the customers had become accustomed that Hannah underwrote the development and production costs of Colby's COMBINATION TESTING MACHINE. First produced by Colby at his Colby International Manufacturing Company at 134

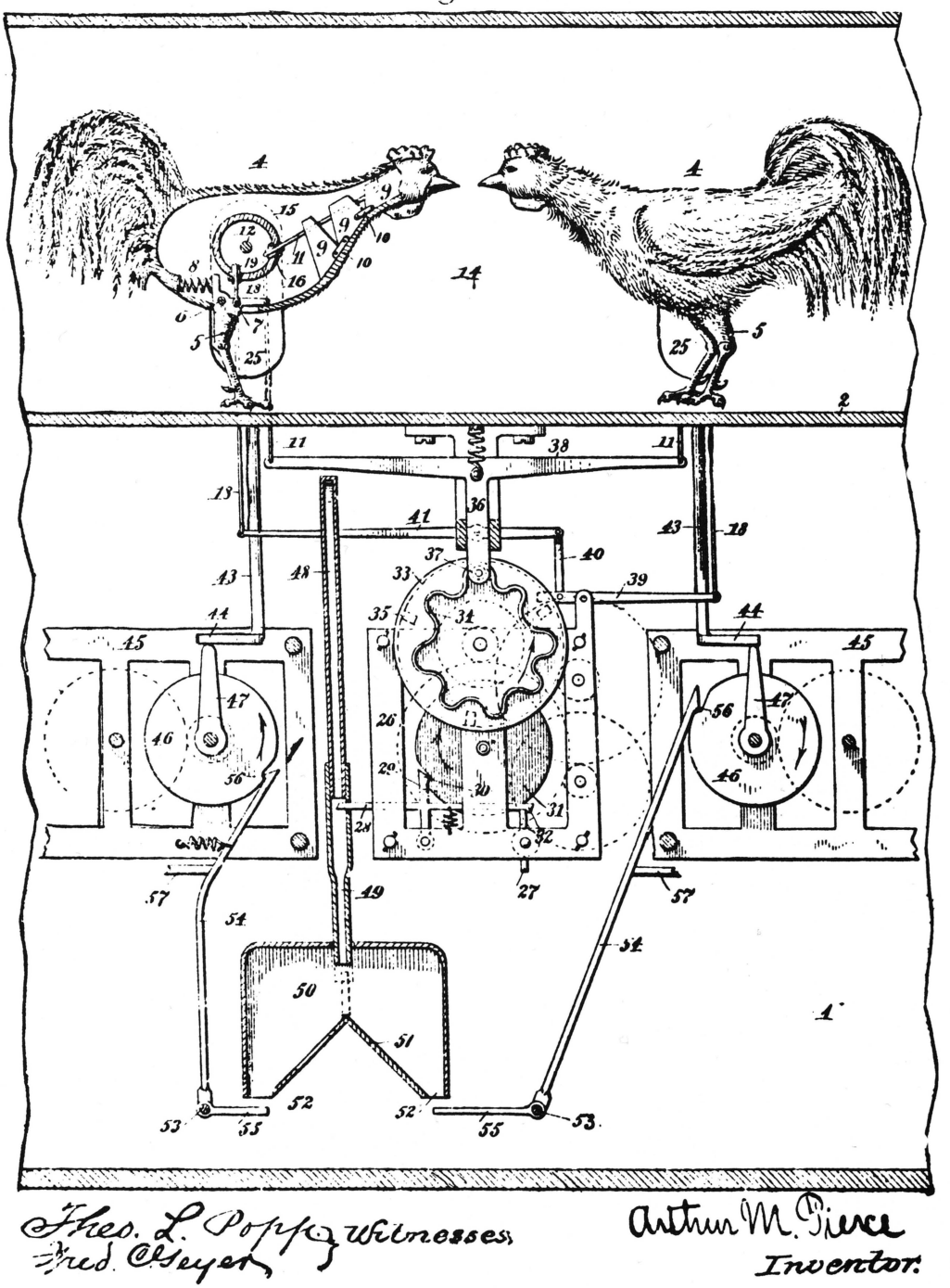
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A. M. PIERCE.

COIN OPERATED AUTOMATON.

No. 411,108. Patented Sept. 17, 1889.

Fig. 1.



Thos. L. Popp, Witnesses,
Fred. C. Geyer

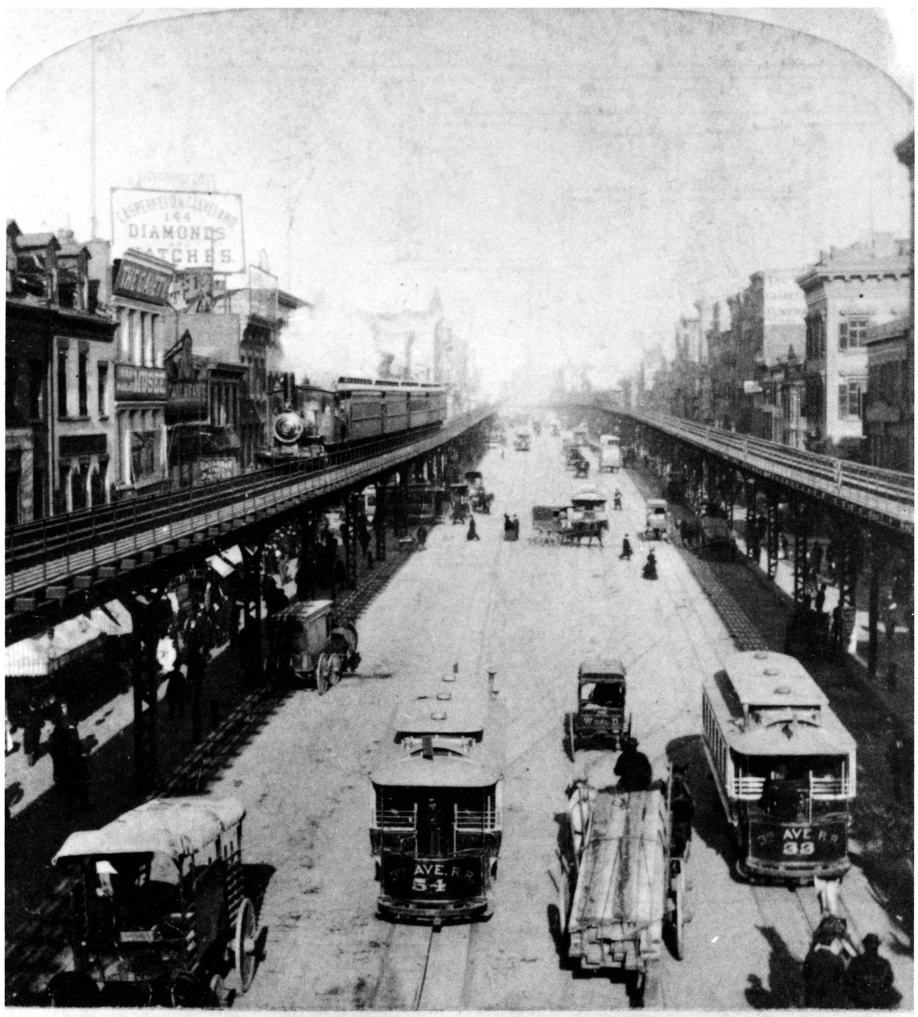
Arthur M. Pierce
Inventor.

The highly sophisticated and combative COCK FIGHT of December 1888 made by L. K. Pierce And Sons in Brooklyn. A 2-player machine, it took a separate coin to activate each cock. Players controlled their bird by a handle and fought until one was knocked down, the loser buying drinks. U.S. Patent Office.

Van Buren Street in Chicago, introduced in November, 1887, followed by the more complicated Colby TESTING MACHINE in August, 1888 — at which time the firm moved to 260 Clark Street, a few doors away from Hannah & Hogg's corporate offices — by the end of the year a new corporation had been formed as the Colby Testing Machine Company at the Clark Street address with Edward J. Colby as President an Alexander D. Hannah as Corporate Secretary.[70] Machines were placed in the Hannah & Hogg saloons and efforts were made to sell the machines on a national basis. The firm survived the Depression years of the early 1890s, changing its name to the Colby Testing Machine Manufacturing Company in 1895, and selling Colby TESTING MACHINE models to saloons in New York city and elsewhere across the country in addition to its Chicago placements.

In a separate venture Colby also made a run at the same market earmarked by Percy G. Williams in Brooklyn, that of a full line producer of saloon placement shockers and physical test machines. Working a year after the formation of the Automatic Battery Company in New York, Colby established his own Colby Electrical Specialty Company at 130 Dearborn Street in Chicago. On the surface seemingly a me-too company making a line similar to Williams', Colby's philosophy of machine design was considerably different. Where the P.G. Williams machines were on stand–alone pedestals as floor models, Colby kept his on top of the bar, greatly extending the location possibilities to cigar stands, barber shops and public places beyond the saloon. Colby's AUTOMATIC ELECTRICAL BATTERY was produced in May, 1888, followed by his bartop AUTOMATIC SPIROMETER and trend-setting COMBINATION BATTERY in October 1889. It was the latter that found the widest placement, offering two activities — that of shocker and lung test — for one money. Colby had the wisdom to patent his machine in both single and dual function versions, with the papers stating: "...a variable and indicated electrical current may be passed through the body of the user separate of combined with devices for testing the lungs. My device consists of arranging, in combination, a lung exercising and testing apparatus, in combination with an electric shocking apparatus so that...the patient or person using may exercise and test the lungs and also receive or pass through the body an electric shock the strength and power of both exercises being visibly connected so that extreme exercise in either or both directions may be avoided."[71] More than just a competitive game, the machine description toys with the fringe of quack medicine, with its instruction labels taking the connection even further. The Colby COMBINATION BATTERY, evolving into the COMBINATION LUNG TESTER with a dice throwing feature added, became one of the most popular and copied test machine formats in arcade machine history. Produced by Colby well into the 1890s in a variety of models by his Colby Specialty Supply Company on Dearborn Street, later by his Colby Specialty Manufacturing company at 95 Washington, the machines were also built and sold with permission by Adams Electric Battery Company, Ogden & Company, Columbia Novelty Manufacturing Company and Midland Manufacturing Company in Chicago; the New England Manufacturing Company in Southington, Connecticut; and the Automatic Spirometer Company and Medina Manufacturing Company in upstate Medina, New York; not to mention a dozen or more firms that produced the machines into the early 1900s with or without licensing agreements. The production and copying was so widespread the machines soon picked up a generic name as "Colbys."

By 1888, the year electric street



Along the noted Bowery, New York, U. S. A.
Copyright, 1896, by Strohmeyer & Wyman.

The many saloons of the Bowery section of New York City, often row upon row next door to each other under the "L" (or "Elevated") tracks, were the test locations for the wide variety of coin-ops being produced in the city, Brooklyn, Newark, New Jersey and elsewhere along the eastern seaboard. Bueschel Collection.

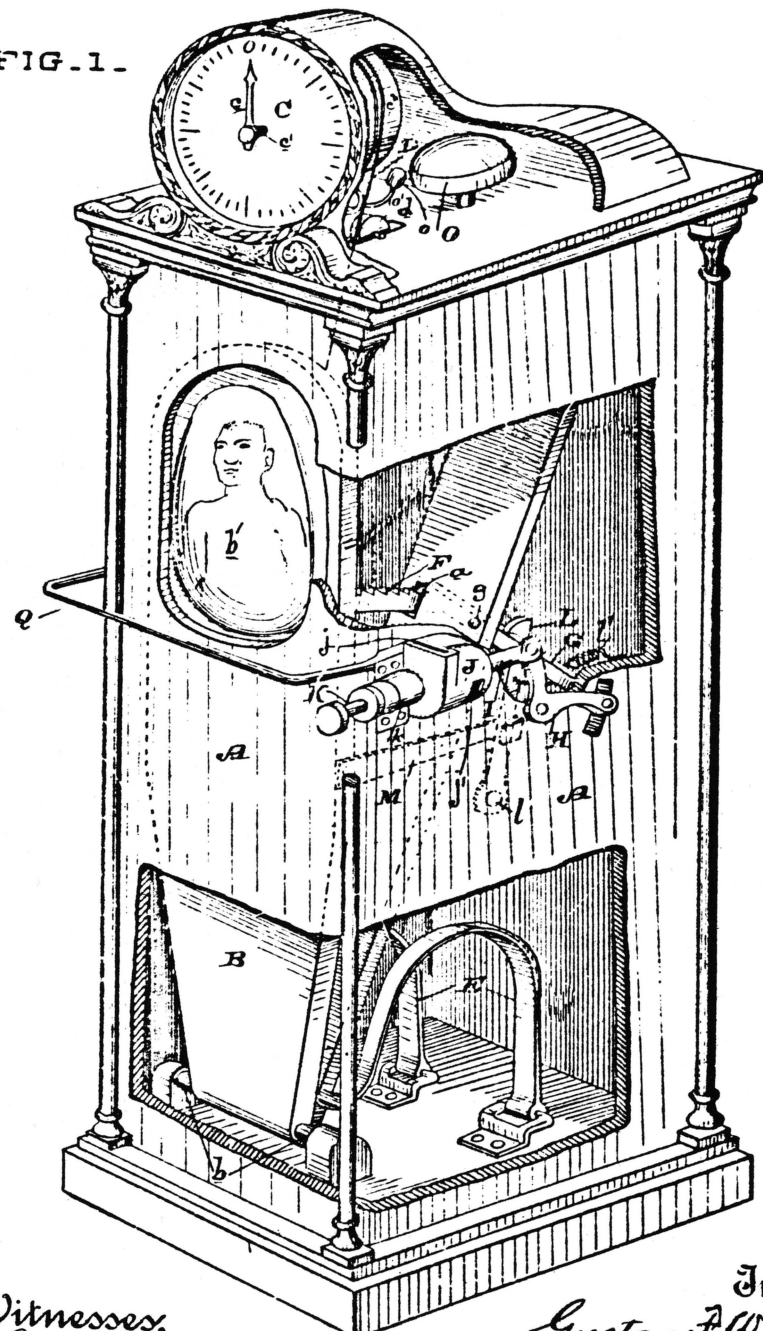
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G. F. W. SCHULTZE.

COIN OPERATED PUNCHING OR STRIKING MACHINE.

No. 414,330. Patented Nov. 5, 1889.

FIG. 1.



The vary day Sullivan beat Kilrain in 75 bareknuckle rounds in Mississippi — July 8, 1889 — Gustav F. W. Schultze of Alameda, California, one of America's leading coin machine pioneers, applied for a patent on his John L. Sullivan ATHLETIC PUNCHING MACHINE, soon to become a saloon placement favorite in the western United States. U.S. Patent Office.

lighting was initiated in Chicago (many other American cities and towns didn't install it for a decade, or more), the idea of coin-operated saloon amusements had attracted inventors and investors from coast-to-coast. Working in San Francisco, one of the greatest saloon cities in the nation, first generation Irish-American saloonkeeper Joseph G. Kearney applied for a patent on a simplified British-style Page-type lifter on May 26, 1888 and got it the following February.[72] Convincing machinist William Meakin of its possibilities, the two went into cahoots as Wm. Meakin and J.G. Kearney to produce their LIFTING MACHINE. By the end of the 19th Century the restructured W. Meakin Machine Company at 622 Commercial Street in the bay city was still making the LIFTING MACHINE among other coin machines, becoming one of the few multiple machine producers in San Francisco. Meanwhile, back east, two of the most popular coin machines to ever see saloon placement — although both were relatively short lived — made their appearance. The first was an even more simplified version of the lifter, invented by Bernard Fuchter of Syracuse, New York, a thriving western New York State industrial city astride the busy Erie Canal, in March, 1888.[73] Needing financing to develop his product, Fuchter went to local industrialist John Lighton for help. Recognizing a good thing, Lighton bought him out and proceeded to establish the John Lighton Machine Company on October 9, 1888, with the express purpose the "...manufacture and sale of Test Lifting Machine and especially for the manufacture and sale of a machine to be known as the JOHN LIGHTON TEST LIFTING MACHINE."[74] What Lighton had done was take Fuchter's original idea and assign it to his son John B. Lighton for improvement. Working fast, young John B. had his own patent application in by the end of August even before Fuchter's model received its patent assignment, with the firm to begin operations on November 15, 1888. John Lighton senior was the CEO and his two sons, John B. and C. Frank Lighton, handled manufacturing and leasing. They could hardly keep up with the latter. Once the machine hit the market, primarily promoted through mailed flyers with cover letters, the saloon keepers rushed in to capitalize on the instant coin machine fad. The Lighton's had hit a hot button. They went on to cash in on it. John B. Lighton's first effort was to clean up Fuchter's machine, sticking strictly to lifting.[75] In an advanced model, developed the following spring, Lighton and his assistant designer Charles E. Lipe added a pull test.[76] Miraculously, All three applications received patents — Fuchter's original and John B. Lighton's two upgrades — and the John Lighton Machine Company was well on its way to becoming the major producer of saloon placement coin machines in the east. The lines were broadened to include dice throwing trade stimulators and, in 1892, one of the very first 3-for-1 automatic payout slot machines, an entirely new American class of coin machine. In homage to the firm's origins a picture of the original Lighton-designed lifter was included in the front casting of the payout SLOT MACHINE model, a brief stint at fame for the payout was off the market in less than a year as new machine development proceeded apace with unchecked speed.



Early coin-op fortune teller is United States Machinery And Inventions GYPSY QUEEN, made for public locations. Play is 5¢ for "The sweetest music the finest pencil and your fortune in gold." Machine plays a music box while it imprints a fortune on a pencil and delivers it to the player, a combination music, amusement and vending machine. Date is 1890. Bueschel Collection.

The Lighton firm also deserves strong credit for attempting to break the bonds of machine placement by reaching out for new markets. Well established as bar pieces, the Lighton's were reaching this market in depth by their combination of direct mailing flyers and proposals to saloons plus direct contact by agents. It was with Lighton's multiple test AUTOMATIC GYMNASIUM model of May, 1889 that John B. Lighton elected to go deeper by attracting the attention of the physical fitness market, something well established with the monied classes but also a rapidly growing segment of America's leisure time activities now that the 8–hour day and only half a day of work on Saturdays was gaining ground over the normal 50 to 60 hour work week. It was a worker's right that was shocked into the American sensibilities by the bloody Haymarket Riot in Chicago in May, 1886 and a series of less volatile worker's rallies that followed. Lighton promoted "The AUTOMATIC GYMNASIUM lifting machine which is an automatic machine for testing the strength. Wherever introduced it is largely patronized and is a money maker. The machines are not for sale but are leased to prominent hotel, gym-



The Newark Technical School, a free evening school in Newark, NJ — sign is on door at right — has an array of machines donated by Clement C. Clawson of the United States Machinery And Inventions Company in Newark. The purpose to train young men in the new technologies. Machine in right foreground is the firm's musical scale,

THE PATENT STRIKING NUMBER MACHINE.

A Game of Skill or of Chance, as required.

Is a great machine to sell to Saloons, Cigar stands, etc., especially since so many States have enacted and are enforcing laws against gambling slot machines. This machine can be used as a game of skill or chance just as desired, depending on how it is used.

Primarily it is solely a game of skill and therefore is not illegal and cannot be stopped or seized by the authorities. It is very attractive and will draw a great deal of money. It is somewhat difficult to describe it accurately on paper. It consists of a base (*a*) which contains the automatic machinery and the money box, also an upright, hollow, grooved pedestal with a glass front (*c*) in which freely slides up and down a small wooden block having a double pointed indicator attached. On each side of this groove a scale is affixed, divided by printed lines into 72 equal spaces. The first space at the bottom being No. 1 while the highest, at the top, is 72. In the center of the base (*a*), just in front of the pedestal, is a smooth wooden knob (*b*). Now by striking this knob a slight blow (with more or less power) with the palm of the hand the connecting automatic machinery in the base will throw the wooden block with the horizondal indicator to a greater or less height where it remains (until released) with the points of the indicator covering the figures of the scale. The Striking Number Machine is used in many ways.

First, as a game in which the players strike the knob alternately, the first one making 100, 300, 500 or more points (as agreed upon) wins the game; but this is no easy matter, for there are pit-falls to be avoided, as a second scale at the side of the first one shows that if the points of the indicator happen to rest on certain numbered spaces, the player is set backward, or forward, from one to twenty points, or may lose his next strike as a forfeit, or get "busted" altogether and have to get back to zero (or nothing) and commence all over again. The player must make his exact number of points, as in pool, and if he overruns his score is "busted" and goes back to nothing.

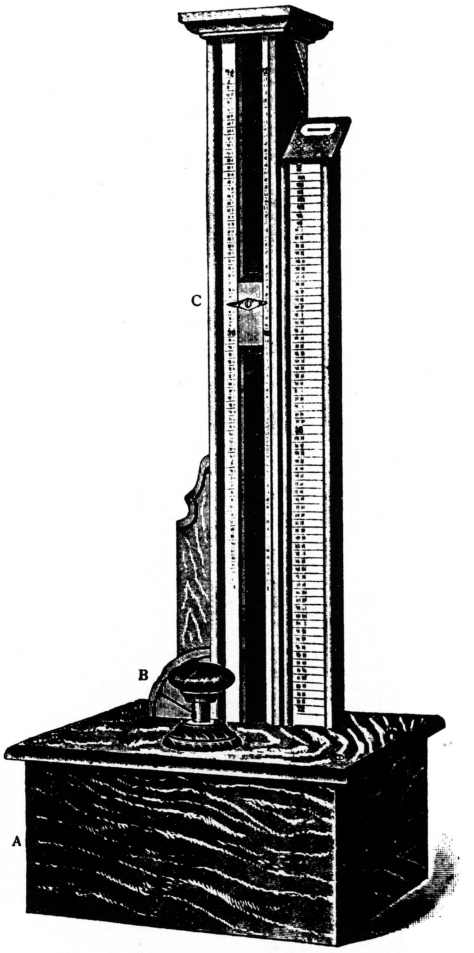
The game is one in which delicate skill is demanded. It requires no great force to throw the block up to 72, and can be easily and certainly done every time—as 72 is the top of the scale and the block cannot go any farther—but 72 is one of the fatal numbers and must be avoided. 71 is the best number as it wins the game in one throw, 69 and 70, however just below it, are fatal numbers, and very few indeed strive for the magic 71 without getting broke and going back to nothing or out (as agreed upon).

Another way is to select a number on the scale, say 40, 50, 60 (or any agreed number), and try to regulate the blow so as to make the pointer stop on or near that number, the player, who is farthest away from the selected number, losing the game.

The automatic machinery can be arranged so as not to respond to the blow unless a nickel is dropped in the slot, or to work by a key (in possession of the house) without the use of money. It is especially used as a great trade bringer, as much money is spent for cigars or drinks, and the printing on the scales can be arranged to suit.

We know of this machine having taken in from 5 to 15 dollars a day for weeks at a time. The beauty of the machine is that it can be run at any and all times *as its use is not illegal*, but it can be used as a gambling machine, when desired, with no chance of detection.

Price for the Striking Number Machine $30.00



The Patent Striking Machine.

Typical bartop amusement game could be a skill or chance device, coin-op or not, to meet local legal requirements. The STRIKING NUMBER MACHINE was made and marketed by The American Auto-Machine Company of New York City, October 1899. Bueschel Collection.

nasia and other first class public resorts on the following terms: 75% of the first $100 goes to the company, and 50% thereafter."[77] By not relinquishing the ownership of their machines the Lightons in effect became builder-operators, with a front-loaded 75% take and an attractive 50/50 split thereafter, a far cry from modern operator practices of loaning money to locations and purchasing placements. Their practices made the Lightons rich men, and stimulated more machine development. As reported in 1890, "It (Lighton) is a very important and growing business in the United States and Canada. The works comprise two floors at...Grape and East Water Streets with all the necessary machinery operated by steam power (with) about 25 men employed."[78] For an industry that didn't exist five years earlier these were big numbers.

But the Lighton's couldn't keep their leasing program under control. The rapid expansion of the coin machine business, and the willingness of others to sell direct to locations severely threatened the Lighton grip on the market. So they broke, and sold direct. When the Lighton GRIPOPHONE entered the market in 1893, a pale copy of the earlier DeVantery HAND POWER TEST, it entered saloon equipment catalogs. B.A. Stevens in Toledo, Ohio sold it with other Lighton machines. A later lifter model called JOHN LIGHTON'S LIFTING MACHINE entered the Ogden & Company catalog in Chicago in 1897 as "...the best paying automatic device yet invented."[79] Yet these machines may have been buyout factory stock, or refurbished models, as the

Lighton firm was out of business by then. After a dazzling six year run, by the end of 1894, after diversifying into cash registers and other commercial products, the firm shuttered its doors, literally ending the Syracuse run at being a coin machine capitol. The death of John Lighton Senior may have triggered the fall. Whatever the reason, in the summer of 1894 John B. Lighton was a tax collector for the IRS and was selling insurance by 1899.[80]

The other popular yet short-lived saloon game created in 1888 started a uniquely American trend in coin machines that survives to the present, that of the two-player competitive game. Such machines had been built before the advent of coin-ops, often simulating a match between two boxers, but it took Arthur M. Pierce of Brooklyn to turn the concept into a money making proposition. It also took Pierce's genius to double the money. Creating an engagingly attractive simulation of a brutal and bloody macho sport, Pierce produced a large glass boxed game called COCK FIGHT in which each of the two articulated fighting cocks had their own controls and, to pay the way, separate coin chutes. To play the game, the players had control of "...the figures of the two cocks in a fighting attitude, a common motor adapted to actuate the necks and legs of both of said cocks, and an independent motor for each cock, one of said independent motors being arbitrarily controlled by the weight of a coin and adapted to move the respective cock to which it is attached."[81] Whatever the merits of COCK FIGHT, it was quickly off the market, as was Pierce's previous machine, a window tapping advertising automaton. A lawyer by profession, Pierce may have been a mechanical Wunderkind, although another possibility to explain his limited productivity may be in order. He could well have been stealing the ideas of his clients, a despicable practice highly prevalent at the time. It was just one of the reasons patents were so mistrusted by the "little people", the effect of which was to give great control over coin machines and their developments to the major inventors and large manufacturing firms to come, the latter with reliable and loyal attorneys who provided them with with long lists of controlling patents that severely limited independent ideas and production. Other saloon machine ideas proliferated. Some prospered; most didn't. Among the notable and more successful examples were the elaborate multi-functional test machines built by John F. Bower. Working in Chicago, and literally following in the footsteps of Edward J. Colby, Bower made similar machines. His enormous WEIGHING AND STRENGTH TESTING MACHINE, followed by his AUTOMATIC LUNG TESTER, made by Bower's Automatic Machine Company in March and October 1889 respectively, were followed by his COMBINATION SCALE of March 1889 and AUTOMATIC SPIROMETER of February 1891, both made by the Combination Scale Company, a separate corporation at 167 Dearborn Street. They were later followed by an advanced model of the COMBINATION SCALE made by Bower's own Bower Machine Company on the south side of Chicago at 2607 S. Halsted in 1894.[82]

Clever devices that offered views of the world not available elsewhere, or that simulated some living activity or event, were also popular. Patent attorneys William C. and Edwin F. Murdock of Washington, in the District of Columbia, applied for patent on a well liked cabinet horse race coin machine called RACING CONTEST in June 1889, and for a smaller bartop trade stimulator version called HORSE RACE in August 1890, with brother Edwin F. Murdock listed as the inventor in both cases, although the origins are questionable.[83] The very day that the Great John L. won his long anticipated fist fight with Baltimore's own Jake Kilrain, on Monday July 8, 1889, Gustav F.W. Schultze, of Alameda, California (later to be acclaimed as the Father of the automatic payout slot machine, only his fame was lost to future generations) submitted the patent papers for his highly successful JOHN L. SULLIVAN ATHLETIC PUNCHING MACHINE, the latter becoming a saloon standard in San Francisco and other western saloon sites. Richard K. Fox of *The National Police Gazette* had long taunted Sullivan for his refusal to fight Kilrain, a Fox protege, and in fact gave the *Gazette's* championship belt to Kilrain to rile Sullivan. When the long awaited match took place it was an illegal bareknuckle bout in which a round ended only when a man was knocked down. It took place in front of three thousand fight fans in a cleared thicket in the small backwoods Mississippi town of Richburg where the temperature was over a hundred in the shade, most everybody coming up from New Orleans by train. Fighting for 2 hours and 16 minutes, under the watchful eye of Kilrain's timekeeper Bat Masterson, former sheriff of Dodge City in Kansas, both men were bloody and burned by the sun before the fight was called in Sullivan's favor after the 75th round . The horror of the day ended fighting under the London Prize Ring rules and led to the use of padded gloves and 3-minute rounds. It also led to a rash of John L. Sullivan punching machines. Besides the Schultze version well known coin machine designer Luthor D. Haskell, Jr. of Salem, Massachusetts, made a JOHN L. SULLIVAN machine late in 1898 and the Beverly Machine Company of Beverly, Massachusetts, later made their STRONG BOY, a Sullivan nickname. There were many others, with more arcade machines named after John L. Sullivan than any other living person in coin machine history.

Offbeat machines included the alluring and colorful bartop KALEIDOSCOPE, made in the summer of 1889 by a young Clement C. Clawson — later to become the first nationally famous producer of payout gambling slot machines — and his United States Machinery And Inventions Company of Newark, New Jersey. For a nickel; the customer saw an ever changing pattern of flashing colors created by rotating a mirrored drum of colored glass and other objects.[84] The Amusement Machine Company, located on Nassau Street in New York City, was making an athletic test saloon machine in July 1890, before it earned its fame for its primary products of payout slots designed by William W. Rosenfield, one of the firm's founders and stockholders.[85] The beginnings of the large floor size saloon amusement machines came with the sophisticated and complicated HORSE RACES made by the Automatic Machine Company, Ltd., in New Orleans, Louisiana in the summer of 1891. Four cast iron horses with " ... gaily dressed jockeys ... start off on a frantic race along an endless belt (on) machines which contain a fully equipped race track."[86] Not uncommonly as has been seen, patentee and manufacturer Charles Carroll, president of the firm, was a lawyer.[87] He must have been brilliant, for his HORSE RACES machine set the standards and worked out many of the problems of the electric console machines that would follow

over forty years later, unless he obtained the patent rights to someone else's machine by fair means or foul, with the name of the originator lost to any records.[88] Another major Brooklyn player in the production of saloon physical test machines entered the field in January 1981, this time a substantial corporation funded in the amount of a million and a half dollars, unheard of in its day, known as the National Automatic Machine Company. Coin machines had finally moved off the entrepreneurs bench to become big time, as evidenced by the fact that one of the industry's new capitalists, LeRoy W. Baldwin — the man from Rutland, Vermont, that Percival Everitt had tabbed six years before to make his scales in America — was one of the seven shareholders of the new firm.[89] Their first product was a fairly conventional combination LIFT, GRIP AND FINGER TEST, although later machines by National Automatic and its sister corporation National Scale and National Electric showed some ingenuity. Even the amusing found its place in the saloon. Among the more outlandish examples were John Milo's SQUEALING PIG and BRAYING GOAT grip test machines, with both cast iron animals letting out a howl once their tails were pulled to score the pull strength on a dial.[90] Thus it was that in the Americas — including the United States and Canada — most of the physical test saloon machine formats were developed and in place by the end of the 1880s, just as they were in Great Britain. Saloon placement machine development would proceed apace, but not much in the way of new machines formats would show up for over half a century, or until new power sources and simulation screens would make their appearance another two or three decades after that. No one dared think that coin machine development had ended yet all could see that it had perceptively slowed down. Many new machines would be produced by larger new makers in the years ahead, some clever enough to be landmark models, yet by and large, the new developments were rehashes of prior ideas. After a dazzling display of half a decade the established coin machine industry settled back to make their machines and count their money, a situation that ended for many in the Depression years of 1893 and 1894, to make coin machines a mature industry ten flat years after they had started. It would take outside inventions and a whole new concept of machine placement to move the industry out of its lethargy.

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[43] "The Penny Arcade," *The Billboard*, March 15, 1947.

[44] George W. Hall, of New York, N.Y., *Spirometer,* Applied: January 6, 1886; U.S. Patent No. 343,310, June 8, 1886.

[45] *Price List of Out and Indoor Sports*, Peck & Snyder Company, New York, New York, 1886

[46] George B. Fowler, of Brooklyn, assignor of one-half to Andrew Peck and Washington I. Snyder, both of New York, N.Y., *Hand Grip-Tester,* Applied March 6, 1886, U.S. Patent No. 344,095, June 22, 1886.

[47] Data from city directories and researches by Gerald W. Rice, New Hampshire Room, City Library, Manchester, New Hampshire, June 23, 1978, and from Articles of Incorporation, *Standard Electric Company of Vermont,* dated October 1, 1886, Secretary of State, State of Vermont.

[48] Edwin R. Whitney, of Manchester, N.H., assignor to Horace and William Paddock Fairbanks, of St. Johnsbury, VT, *Electro-Therapeutic Strength - Testing Machine,* Applied: July 26, 1886; U.S. Patent No. 362,133, May 3, 1887.

[49] Ferdinand Mosser, New York, New York, Assignor by Mesne Assignments to the Hand Power Test Machine Company of New Jersey, *Coin-Controlled Cigar Delivering Exercising Machine,* Applied: April 7, 1887; U.S. Patent No. 381,409, April 17, 1888.

[50] Joseph DeVantery, Brooklyn, N.Y., Assignor to Hand Power Test Machine Company, New York, N.Y., *Coin - Controlled Strength Testing Machine*, Applied: February 17, 1888; U.S. Patent No. 385,921, July 10, 1888.

[51] *History and Commerce of Brooklyn Illustrated*, A.F. Parson's Publishing Company, 1983, and data from city directories and researches by Elizabeth L. White, Local History Librarian, Brooklyn Public Library, January 16, 1978.

[52] Peter Beetz, of Brooklyn, New York, *Grip-Tester or Similar Coin-Controlled Device,* Applied: April 4, 1888; U.S. Patent No. 394,812, December 18, 1888.

[53] Peter Beetz, of Brooklyn, New York, *Coin-Controlled Grip-Tester or Similar Device*, Applied: December 11, 1888; U.S. Patent No. 411,569, September 24, 1889.

[54] Alexander H. Roovers, Alfred W. Roovers and Percy G. Williams, Brooklyn, New York, *Galvanic Battery*, Applied: September 15, 1885; U.S. Patent No. 336,352, February 16, 1886.

[55] Percy G. Williams, and Alfred W. Roovers of Brooklyn, New York, *Coin-Operated Induction Coil*, Applied: May 6, 1887; U.S. Patent No. 372,441, November 1,1887.

Percy G. Williams, and Alfred W. Roovers, of Brooklyn, New York, said Roovers assigned to said Williams, *Cash-Drawer*, Applied: December 14, 1887; U.S. Patent No. 384,010, June 5, 1888.

Percy G. Williams, and Alfred W. Roovers, of Brooklyn, New York, said Roovers assignor to said Williams, *Coin-Operated Induction Coil*, Applied: January 20, 1888; U.S. Patent RE10,949 (Re-Issue of Patent No. 372,441), July 24, 1888.

Percy G. Williams, and Alfred W. Roovers, of Brooklyn, New York, Assignors to The Automatic Battery Company, of same place, *Coin-Operated Coil*, Applied: September 1, 1888; U.S. Patent No 399,591, March 12, 1889.

[56] Articles of Incorporation, *The Automatic Battery Company*, Filed February 23, 1888, Department of State, State of New York.

[57] Data from researches by Mary and Frederick Fried, New York, New York, 1987. Also see notes 54 and 55.

[58] Percy G. Williams and Alfred W. Roovers, of Brooklyn, New York, said Roovers assigned to said Williams, *Coin-Released Spirometer*, Applied: December 24, 1888; U.S. Patent No. 403,978, May 28, 1889.

[59] Advertisement of AUTOMATIC LUNG TESTER by P.G. Williams, Proprietor and Inventor, 44 Flatbush Avenue, Brooklyn, N.Y., *The National Police Gazette,* June 15, 1889.

[60] Alfred W. Roovers and Alexander H. Roovers, of Brooklyn, New York, *Coin-Operated Power or Strength Testing Machine,* Applied: June 14, 1889; U.S. Patent No. 423,702, March 18, 1890. Percy G. Williams, of Brooklyn, New York, *Galvanic Apparatus for the Human Body*, Applied June 6, 1890; U.S. Patent No. 447,857, March 10, 1891.

[61] Percy G. Williams and Alfred W. Roovers, *Coin-Controlled Dice Throwing Machine,* Applied: December 26, 1889; U.S. Patent No. 491,971, February 14, 1983.

[62] Vol. 104, *The Mercantile Agency Reference Book*, R.G. Dun & Co., New York, March, 1894.

[63] William Riley Pope, of Baltimore, Maryland, Assignor to the National Electric Machine Company, of New York, N.Y., *Coin-Operated Induction Coil* Applied: August 31, 1887; U.S. Patent No. 374,495, December 6, 1887.

[64] William R. Pope, of Baltimore, Maryland, Assignor to the National Electric Machine Company, of New York, N.Y., *Coin-Operated Induction Coil*, Applied: April 3, 1888; U.S. Patent No..500,776, July 4, 1893.
William Riley Pope, of New York, N.Y., Assignor to the National Electric Machine Company, of same place, *Coin-Controlled Machine for Administering Electricity*, Applied: August 13, 1892; U.S. Patent No. 492,486, February 28, 1893.

[65] Joseph W. Hazell, of Baltimore, Maryland, *Coin-Operated Induction Coil*, Applied: January 25, 1888; U.S. Patent No. 385,927, July 10, 1888.

[66] William H. Ashwell, of St. Louis, Missouri, *Coin-operated Machine,* Applied: November 12, 1890; U.S. Patent No. 452,068, May 12, 1891.

[67] Researches in United States patents, *U.S. Patent Index*, 1876-1903, Chicago, Milwaukee and Cincinnati Public Libraries, 1974-1980.

[68] Richard Hancock, "Remember...Way Back When We First Had Scales," *The Coin Machine Journal*, April, 1932.

[69] *History of Chicago and Souvenir of the Liquor Interest*, Belgravia Publishing Company, Chicago, 1893.

[70] *The Lakeside Annual Directory of the City of Chicago*, 1878-1929, Chicago Public Library and Chicago Historical Society.

[71] Edward J. Colby, of Chicago, Illinois, *Coin-Controlled Electric Coil*,Applied: October 17, 1889; U.S. Patent No. 445,220, January 27, 1891.

[72] Joseph G. Kearney, of San Francisco, California, *Coin-Controlled Lifting Machine*, Applied: May 26, 1888; U.S. Patent No. 397,295, February 5, 1889.

[73] Bernard Fuchter, of Syracuse, New York, Assignor to John Lighton, of same place, *Coin-Controlled Lifting Machine*, Applied: March 22, 1888; U.S. Patent 397,229, February 5, 1889.

[74] Certificate of Incorporation, *John Lighton Machine Company*, Dated: October 9, 1888. Filed and Recorded: November 15, 1888. Department of State, State of New York.

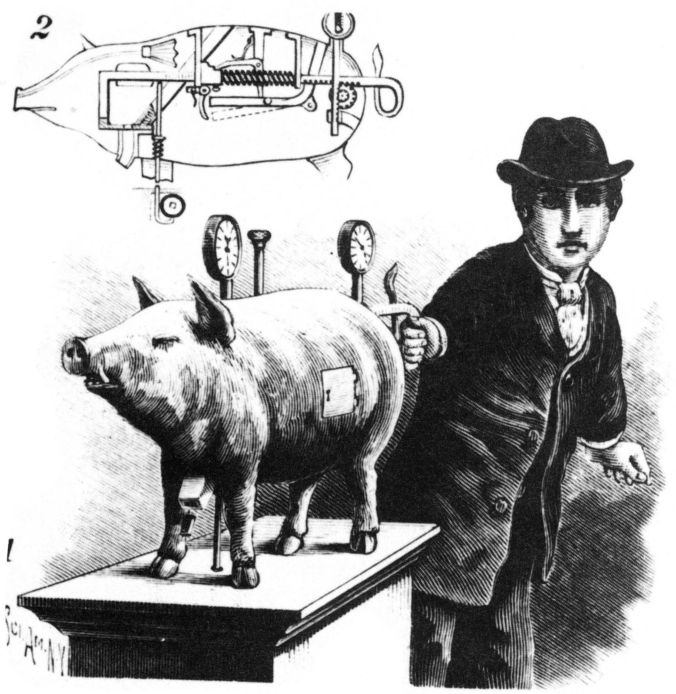
[75] John Lighton, of Syracuse, New York, *Coin-Con-*

Scientific American. [MARCH 20, 1897.

it would appear, only in underground structures. This review is only a beginning of all the work done by the American school, but it is at least suggestive of the value of its operations.

AUTOMATIC STRENGTH TESTER AND VENDING MACHINE.

The curious and novel nickel-in-the-slot machine shown in the accompanying illustration has recently been patented by Mr. John Milo, of Williamsbridge, New York City. As will be seen from the sectional view, the mechanism is inclosed in a case formed to represent some kind of animal, and it is so arranged



that, by placing the purchase coin in a slot, and applying strength in the form of a pull or a blow to the proper handle, the force applied will be measured upon a dial and the article of purchase will be automatically delivered to the purchaser.

A horizontal bar extending longitudinally through the body terminates in a handle which is shaped to represent the tail of the animal. This is kept in its normal position by a coil spring. At its front end it is bent down and back to form a flat, horizontal plate, in which is cut a hole large enough to receive a package of the articles to be sold. This plate slides horizontally beneath the end of an inclined tube, which is filled with a supply of these packages, and when the bar is drawn forward the hole is brought beneath the end of the tube and receives one of the articles therefrom. Upon being released, the bar is drawn back by the coil spring and carries the article over an outlet tube, through which it falls and is delivered to the purchaser.

The purchase coin falls into an elbow tube, which is so pivoted that the weight of the coin causes it to rock forward and release a catch which prevents the horizontal bar from being moved, except when the coin is inserted. After releasing the catch, the coin rolls out of the tube into the body of the figure, from which it can be recovered by unlocking a door placed conveniently in the side of the machine. At the rear end of the bar is formed a suitable horizontal rack, whose teeth mesh with a pinion which in its turn serves to operate a vertical rack. The latter rack terminates in a rod, which, extending through the back of the animal, carries a pointer which indicates on a graduated scale the force of the pull.

At the forward end of the horizontal bar are attached two cams, one above and the other below. The first serves to compress a small bellows, which is arranged to produce a noise in imitation of the animal's cry. The lower cam depresses a rod which starts a music box concealed in the base of the machine.

The second indicator scale and the vertical rod shown projecting from between the shoulders of the animal are for registering the force of a blow. The internal mechanism is similar to that already described, the article being automatically presented to the purchaser as before.

A combination physical test and cigar vending machine for saloon placement, John Milo's SQUEALING PIG of January 1897 let out a howl when its tail grip was pulled with the results registered on a dial. Cigar drops when grip is released. Scientific American, March 20, 1897.

trolled Test Lifting Machine, Applied: August 20, 1888; U.S. Patent No. 425,436, April 15, 1890.

[76] Charles F. Lipe and John Lighton, of Syracuse, New York, *Coin-Controlled Test Lifting and Pulling Machine*, Applied: May 23, 1889; U.S. Patent No. 425,892, April 15, 1890.

[77] *The Industrial Advance of Syracuse, New York*, McKinney & Issacs, Syracuse, New York, 1890. From Onondaga Historical Association, November 7, 1977.

[78] *Ibid.*

[79] John Lighton's Lifting Machine, *Ogden & Co. Latest Illustrated and Descriptive Catalogue of New and Rare Sporting Goods of Every Description*, Ogden & Company, 185 Clark Street, Chicago, Illinois, 1899. Chicago Historical Society.

[80] Researches by Gerald J. Parsons, Head, Local History and Genealogy Department, Onondaga County Public Library, Syracuse, New York, May 13, 1976.

[81] Arthur M. Pierce, of Brooklyn, New York, *Coin-Operated Automation*, Applied: December 29, 1888; U.S. Patent No. 411,108, September 17, 1889.

[82] Researches in United States Patents, *U.S. Patent Index, 1976-1903*. Also researches in city directories, Chicago Public Library and Chicago Historical Society.

[83] Researches in United States Patents, *U.S. Patent Index, 1976-1903*. Also researches by Betty M. Culpepper, Chief Washingtoniana Division, District of Columbia Public Library, April 29, 1977.

[84] Clement Coleridge Clawson, of Newark New Jersey, *Kaleidoscope,* Applied: August 26, 1889; U.S. Patent No. 416,092, November 26, 1889.

[85] Certificate of Incorporation, *Amusement Machine Company,* Dated: July 15, 1890. Filed and recorded: July 18, 1890. Department of State, State of New York.

[86] "The Nickel in the Slot," *New Orleans Daily Picayune*, June 26, 1891, New Orleans, Louisiana.

[87] Researches by Collin B. Hamer, Jr., Head, Louisiana Division, New Orleans Public Library, New Orleans, Louisiana, August 26, 1975.

[88] Charles Carroll, of New Orleans, Louisiana, Assignor to The Automatic Machine Company, Limited, of same place, *Coin-Controlled Race Course,* Applied: August 29, 1891; U.S. Patent No. 504,312, August 29, 1893.

[89] Certificate of Incorporation, *The National Automatic Machine Company,* Dated: January 15, 1891. Department of State, State of New York.

[90] "Automatic Strength Tester and Vending Machine, "*Scientific American,* March 20, 1897.

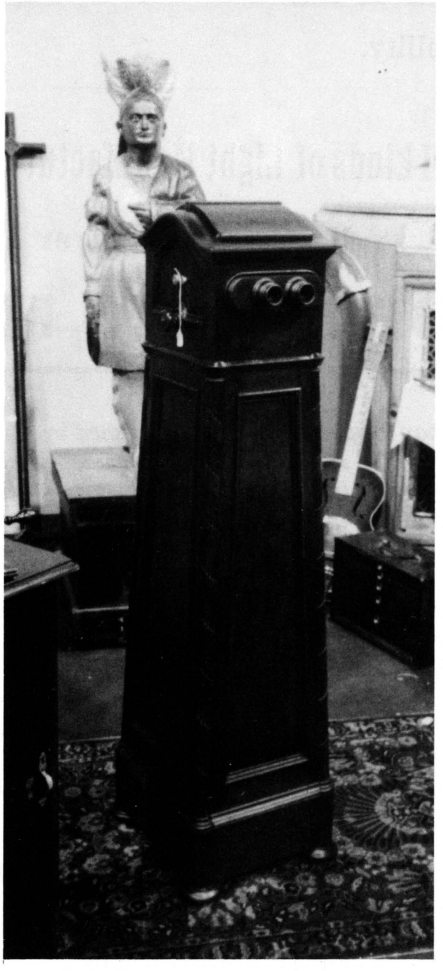
EDISON ENTERS THE PICTURE

The most revealing of human senses is sight. It therefore follows that the most entertaining device that can be created for human enjoyment would have a direct connection to the mind through the eyes. In effect, a peep into pleasure. The idea of seeing something for the fun of it is an old one. Neolithic cave paintings, Egyptian pictographs, Greek marbles and Roman mosaics all utilized this eye to mind connection, evolving from the need to explain religious rites and cultural beliefs to lauding heroic deeds and decorating the walls to enhance the sheer social pleasures of the Roman Bath. Increasingly, to tell a tale, the illustrations were animated much like a preprinting comic strip. But it wasn't enough to fully depict motion. The art of the Great Masters, while bringing joy, pleasure and sometimes moving experiences to its viewers, isn't kinetic. It just sits there. The mind makes the motion, but your sight sees static.

Attempts to impart motion or the simulation of action to art had to wait for the industrial age. It would take machinery to impart the power needed to provide the drive necessary to keep pictures moving. The arrival of photography in the middle of the 19th Century solved the art part of the problem. Pictures could be taken, they no longer needed to be created by hand. The concept of seeing a scene in black-and-white became a high tech contribution to culture. It offered a new way of looking at things. Only later, with the coming of film and advances in the chemistry of color photography, would the B & W view take on the role as a lesser mode of photographic reproduction. When it first became available it was exciting, and remained so depending on its pictorial content. The creation of stereography further enhanced the allure of the photographic image. It looked real, providing a lifelike three-dimensional image in miniature and black and white. Yet this dual image was almost a sidelight invention included in a serious American attempt to create motion with photography. The year was 1860 in a nation divided by the election of Abraham Lincoln of Illinois as President of the United States, an avowed abolitionist now at the seat of power. Lincoln's stand against slavery in the South led to an immediate reac-



Following the Civil War, the viewing of stereo photos became a favored parlor pastime for those who could afford it. The views provided a window to the world, much as television did ninety years later, and accustomed people to picture viewing through peep holes. American Artisan, Oct. 27, 1869.

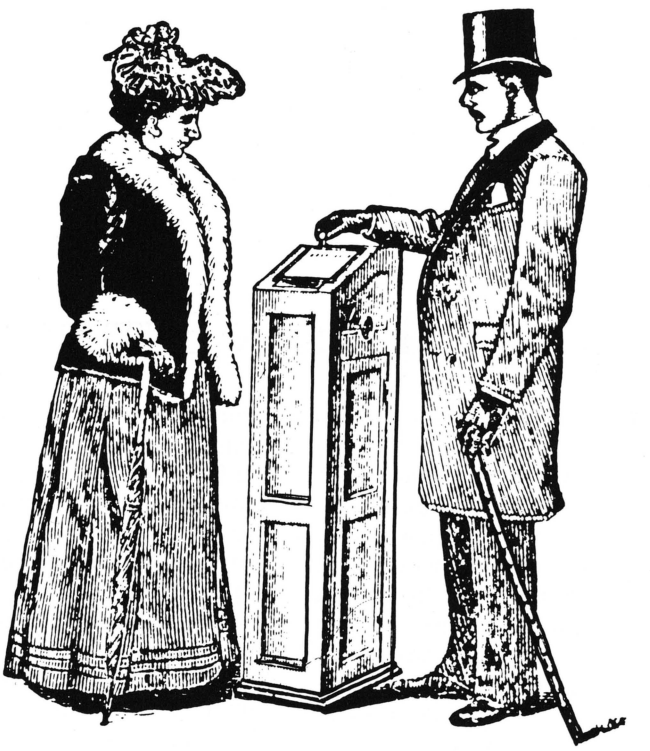


An entire industry built up around home stereo viewing, from the hardware of viewing machines to the software of stereo views, equivalent to the modern VCR and video tapes. This American-made viewer is from the 1870s. Photography by Bueschel.

THE ACME NOVELTY WORKS

ANSALEM G. HART, Proprietor.

Having been a successful inventor, and having faith in my own mechanical ability, I will undertake to perfect inventions for others for a stipulated sum, and, failing to accomplish this, will make no charge. Or I will undertake all kinds of experimental work at a reasonable charge, giving my patrons the benefit of my experience and ability.



All kinds of Light Manufacturing Solicited

No. 29 Grand River Ave.,

DETROIT, MICH.

The pay for peep idea was established by the last decade of the 19th Century. An early promoted machine was the INFORMATION SLOT MACHINE of 1891 made by the Acme Novelty Works in Detroit, Michigan. Inventor Ausalem G. Hart was later important in trade stimulator and vending machine development. The INFORMATION SLOT MACHINE was not a picture viewer but rather a fortune teller. Bueschel Collection.

tion with the State of South Carolina adopting an Ordinance of Secession in December. In less than two months six seceding states would form the Confederate States of America and the nation was polarized. In Philadelphia, working in what had largely been a French and English lens and chemical art, a successful mechanical engineer, part-time inventor and photography buff named Coleman Sellers had a breakthrough idea. Why not take successive pictures of action and mount them on a drum that, when turned at a steady rate by a crank, and viewed, would simulate the movements photographed. Except he couldn't freeze the action with his camera as the existing wet plate process took to long to set up, shoot, keep the plates wet and process. He tried anyway. Taking an existing idea, that of simulating the dimensional view of the human eyes by taking two pictures of the same subject through a lens separated the width of the eyes, Sellers set up his two sons in successive static shots that played back as prints on the drum, almost looked like motion. While Coleman, Jr. pretended to be a carpenter and the younger Horace seemed to rock in a chair next to him, Coleman, Sr. took the photos, processed, set up the next shot, and created a living tableau on photographic plates. He called his device a KINEMATOSCOPE, creating a uniquely original name based on ancient Greek antecedents, and got a patent on it the following year.[91] What happened next was not what Sellers expected. The idea of implied motion was dropped while the notion of popular low cost stereoscopic photography suddenly boomed with the creation of a cheap, hand-held viewer by American author, Harvard professor and stereo enthusiast Oliver Wendall Holmes in 1859 (he didn't patent his device for profit, preferring to have it copied and shared by everyone). With the bombardment of Fort Sumpter in the harbor of Charleston, South Carolina, on April 12, 1861, the War Between the States was underway. It quickly became the most photographed war in history to date. The Crimean War of 1855 and 1856 between Russia on one side and the combined British and French on the other had been photographed but there was no way to reproduce the pictures for popular consumption. The interven-

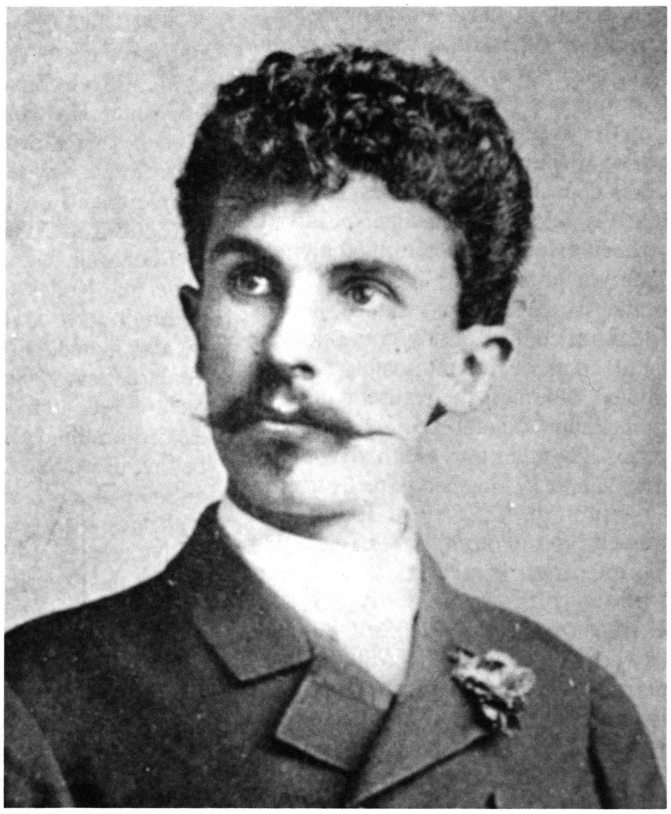
ing six or seven years changed all that. By commercializing stereoscopic photography, Sellers had literally created the beginnings of the home entertainment industry. By the end of the war shocking scenes of death and destruction were common fare for the stereo photographer. Those who could afford it had elegant home viewers to bring the carnage of war into their living rooms while the public at large saw it through Holmes viewers. By the late 1860s and early 1870s the mounted stereo cards had substituted scenes of travel, domestic events and comedy for the ravages of war, bringing the world and the diversities of culture to most homes as viewer costs plummeted and inexpensively printed rather then photographic stereo cards became popular. Much like the availability of the VCR and cheap tapes and rentals a century later, the stereo revolution brought the outside world into the American home where it became a popular pastime and a clock burner of leisure time. The vogue lasted for fifty years, ending with World War 1 and the beginning of the twenties when radio and home movies took their place as the primary vicarious parlor entertainments.

But popular stereoscopic photography wasn't Coleman Sellers' most endearing contribution to society. In reality it was a word. By calling his motion simulating photographic viewer a KINEMATOSCOPE he named an entire international industry that wouldn't even exist for another forty years. His machine name led to the word "cinema".

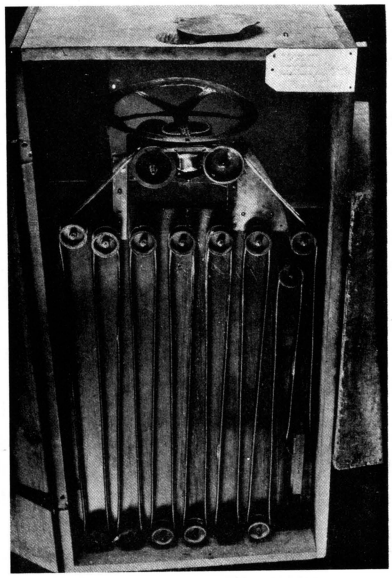
Picture viewing devices became the rage, both in homes and commercially, including sequenced photographic stories, the mini-series of their day. In saloons and clubs, stores and public amusement parks, the idea of paying a fee to see took hold. But it would take the coming of the coin-ops in the 1880s to create the first pay-to-play peep shows. Britisher Thomas Cooper's AUTOMATIC EXHIBITOR of April 1886 seems to have been the first, although the idea soon jumped the Atlantic Ocean. The first American practitioner was a woman, Clara E. Patterson, of New York City. Working the same month that Joseph DeVantery was taking over on the HAND POWER TEST machine in Brooklyn and Percy G. Williams and the Roovers brothers were finalizing their work on their floor shocker for the newly formed Automatic Battery Company, Patterson took a conventional non-electric, ambient light stereo viewer and merely added a coin-receiving mechanism to create her COIN STEREOSCOPE of February 1888. The patent explains the simplicity of her device: "While my invention has particular bearing upon stereoscopes as known in the market, it...is adapted to any and all devices in which a handle is to be rotated by the person who is to receive an equivalent for the money deposited. The essential fea-



The Ottomar Anschultz TACHYSCOPE was placed in Europe in the early 1890s and was exhibited at the World's Columbian Exposition in Chicago in 1893. This is the later ELEKTRISCHER SCHNELLSEHER model made by Siemans And Halske in Berlin in 1893. A. R. Phillips Collection.



Thomas A. Edison's assistant in his West Orange research laboratory, William Kennedy Laurie Dickson, in 1886, age 25. Three years later Dickson would be in charge of the KINETOSCOPE project. Terry Ramsaye Estate.



The prototype Edison Laboratories KINETOSCOPE No. 1 of October 1889 utilized strips of the flexible new celluloid-type film made by the Kodak Company in Rochester, New York. W. K. L. Dickson came up with the idea of perforating the edges to feed the film through sprockets. The coin mechanism would be added to the next developmental model. Terry Ramsaye Estate.

tures, broadly considered, may be enumerated as a handle to operate something, which in a stereoscope is a chain of pictures, a locking device...to prevent the rotation of the mechanism operated by the handle except when a coin is deposited, and devices...to automatically relock the mechanism after it has been given a predetermined number of movements by the handle."[92] The broadness of Patterson's claims, hoping to lock up control of any coin-operated handle crank device, ultimately weren't allowed, although their all-encompassing language did stall peep show development. An ambitious alternative, created by James F. Goodridge of Boston in the summer of 1889, flipped flat monochrome photographs in sequence by a clockwork mechanism while a cylinder phonograph provided a descriptive dialogue. "The would be observer has simply to deposit the proper coin in the chute and at the same time move the handle...permitting each picture... of the series to be studied. At the same time the phonograph describes the same audibly."[93]

The delicate nature of these early coin-op peep shows prevented broad acceptance, and it was three years before any major improvement came along. When it did it came out of Germany in a left handed manner. St. Louis stove maker John Ringen, visiting relatives at Frankfort am/Main in Hessen, Germany, saw something there that led to his February 1892 patent application for a coin-operated stereo viewer that allowed the user to change pictures by means of hand held turn knobs on each side of the cabinet — thus avoiding the hand crank provisions of Patterson's patent — while illuminating the scenes by a light bulb powers by cry cell batteries and timed by a clockwork mechanism. He also called his device a COIN STEREOSCOPE and brought the contraption back to St. Louis for production at his Ringen Stove Company at 508 N. 4th Street. Had Ringen not been so dazzled by his German connection and been more aware of other American developments — the celluloid roll film introduced in 1889 by George Eastman in Rochester, New York, and marketed under the Kodak name, for instance — he might have invented a lot more than he anticipated. In the language of Ringen's patent: "The pictures are carried on brackets attached to an endless belt carried on three rollers (with) the whole belt revolved to exhibit one picture after another as each in turn comes in line with the object-glass and with the rays of light projected by the reflector behind the electric light."[94] Ringen had vertically mounted reflective art on his belt. Had the belt been film, Ringen would have created a simulated motion and reel-to-reel transport, two major inventions to come that made fortunes for their creators. By 1895, both of the latter were standard practice in the peep show art, but Ringen was out of the business and back to making his stoves in a new plant at 416 North Broadway in St. Louis, seemingly none the worse for his brief but expensive stint in coin machines.

Meanwhile the first of the popular peeps made its appearance 300 or so miles up river in the highly industrialized center of Rock Island, Illinois, one of the three cities including Moline and Davenport, Iowa, that surround the U.S. Army's Rock Island Arsenal on an island in the Mississippi River. The arsenal, a vestige of the Civil War and one of the Army's primary sources for rifles, guns and cannon, had made the area a high tech enclave, with hundreds of workers from the tri-cities going to work daily in the arsenal's foundries and machine shops. This industrial base of skilled labor soon found expression in other industries in the private sector, and that included one of the first of the broad line coin machine producers in the country. Milton O. Griswold parlayed his training as a machinist and his friendship with Monroe Kohn, scion of a local family in the liquor distribution business, into the M. O. Griswold & Company at 1510 Second Avenue, close to the river. Kohn handled sales while Griswold created the machine ideas and supervised production. Starting in 1889 with cigar counter trade stimulators, by 1891 Griswold had a line of coin-operated games, gambling wheels and other bartop novelties, and would later opt to produce floor model money models. Griswold's Nickel-in-the-slot-machines were sold by agents, recruited through advertising in *The National Police Gazette*, directed by Monroe Kohn and through printed catalogs. Then, in the summer of 1891, the two partners broke with their own traditions and attempted to get into the lucrative long-term machine leasing business with an advanced device known as the AUTOMATIC PANORAMA. It wasn't that the viewer was so radically different from current mechanical art, it's just that when it came to automatic coin operation, Griswold did it first. Griswold described it as "...a coin-controlled mechanism for picture exhibitors operated by hand..by any suitable motor...which shall present and hold each picture at right angles to the plane of vision."[95] The meat of the offer was detailed in a small business envelope-size promotional folder mailed to saloons and other businesses, such as amusement museums and parks, around 1892: "Fifty dollars ($50) for one hour's work appears big pay. Would you like to make it? You can as well as others. AUTOMATIC Nickel in the Slot PANORAMA works by dropping a nickel in the slot. The machine will

show fifteen views through a powerful French lens. After this is done, the machine is relocked by automatic machinery, and the views cannot be seen until another nickel is dropped in the slot. All the money taken in by the machine, less rental, is profit, as all they do is see the views for their money. We do not sell these PANORAMAS, but rent them only by the year. We no not place them on percentage."[96] Griswold and Kohn quickly discovered that peep shows required more than machine hardware; there was also the needed software of pictures. They met it with "..the very finest that can be made. Our collection is the largest in the world, and the same has been obtained at an expense of many thousands of dollars. We have views of every place, in every land, of any note for scenic beauty or historical association. In our own country, life and scenes from the woods of Maine and 'Sugar Camps' of Vermont, to the plantations of Georgia and the Cotton Fields and Orange Groves of Florida. The machine, unlike many nickel in the slot machines which depend on their novelty for patronage, will not grow old, as public interest is renewed with each change of the view. Ten minutes of your time each month is all that is required to change the views. This is two hours a year. Can you make over $50 an hour any other way?"[97]

But it wasn't motion. As interesting as these views might have been (although it is difficult to conceive that a succession of still photos of a Vermont Sugar Bush or of sweaty Maine loggers at work would bring a lot of people back for more) the most exciting and far reaching coin machine remained to be invented. The full promise of the eye to mind connection continued to be unfulfilled.

Except it already had been. Stop-motion pictures had been taken. It only became a matter of how to display them. Eadweard — a weird way to spell Edward — Muybridge, an English-born San Francisco photographer, had been commissioned by Governor Leland Stanford of California in 1873 to take pictures of moving horses to show how their feet hit the ground, both to make a point and win a bet. But they could only be shown as prints. In Germany in the 1880s, where much development work was underway at the same time on photography and coin machines, Ottomar Anschütz had created a device that flashed a light from one of fellow-German Heinrich Geissler's cathode ray tubes — the rapid on-and-off illumination could be controlled — through photographic plates on a wheel. The effect of the simulation was of motion. Anschültz saw a money making opportunity, created a working coin-operated model which he called the TACHYSCOPE, a monstrous and touchy cabinet device, and briefly profited as examples were placed in the railroad stations of Paris, Berlin and London. It was in one of these locations, presumably Paris in 1889, that the TACHYSCOPE caught the attention of a 42 year old American who was already well known throughout the world as the Wizard of Menlo Park: Thomas Alva Edison. Prior to that, in 1886, Edison had met Eadweard Muybridge, who was by then working with the University of Pennsylvania (and attending meetings at the Franklin Institute in Philadelphia where he met moving image pioneer Coleman Sellers), and was shown the workings of his ZOOPRAXOSCOPE, a projector that displayed drawings made from Muy-



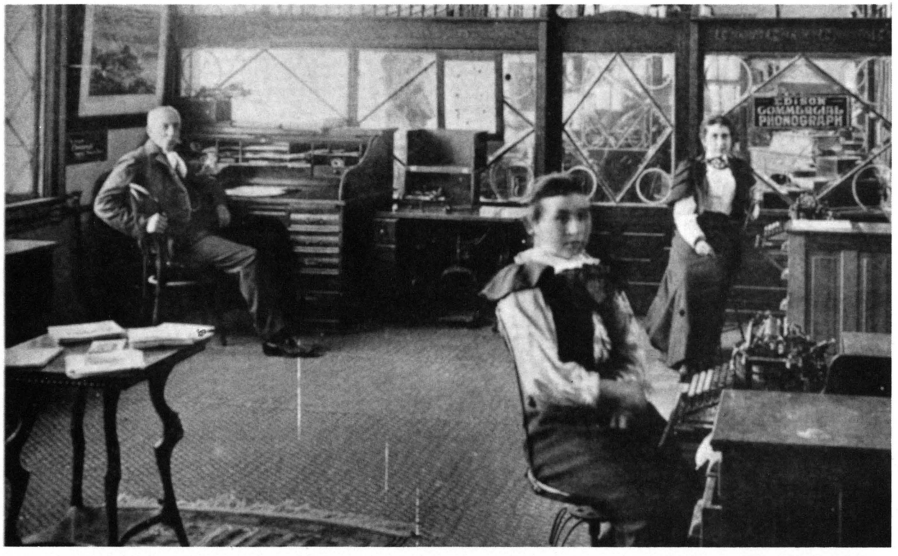
The production model of Edison Manufacturing Company KINETOSCOPE of 1894 as supplied to the Kinetoscope Company for their parlor operations. Spool banks controlled the tension in a endless fifty foot loop containing a single feature. Courtesy Edison National Historic Site.

bridge's stop-motion photography of horses, other animals and the University's varsity track team. In Edison's fertile mind, the long awaited invention was taking place, although it would be up to another man to put it all together and make it workable. And he did it alone, when Edison wasn't around.[98]

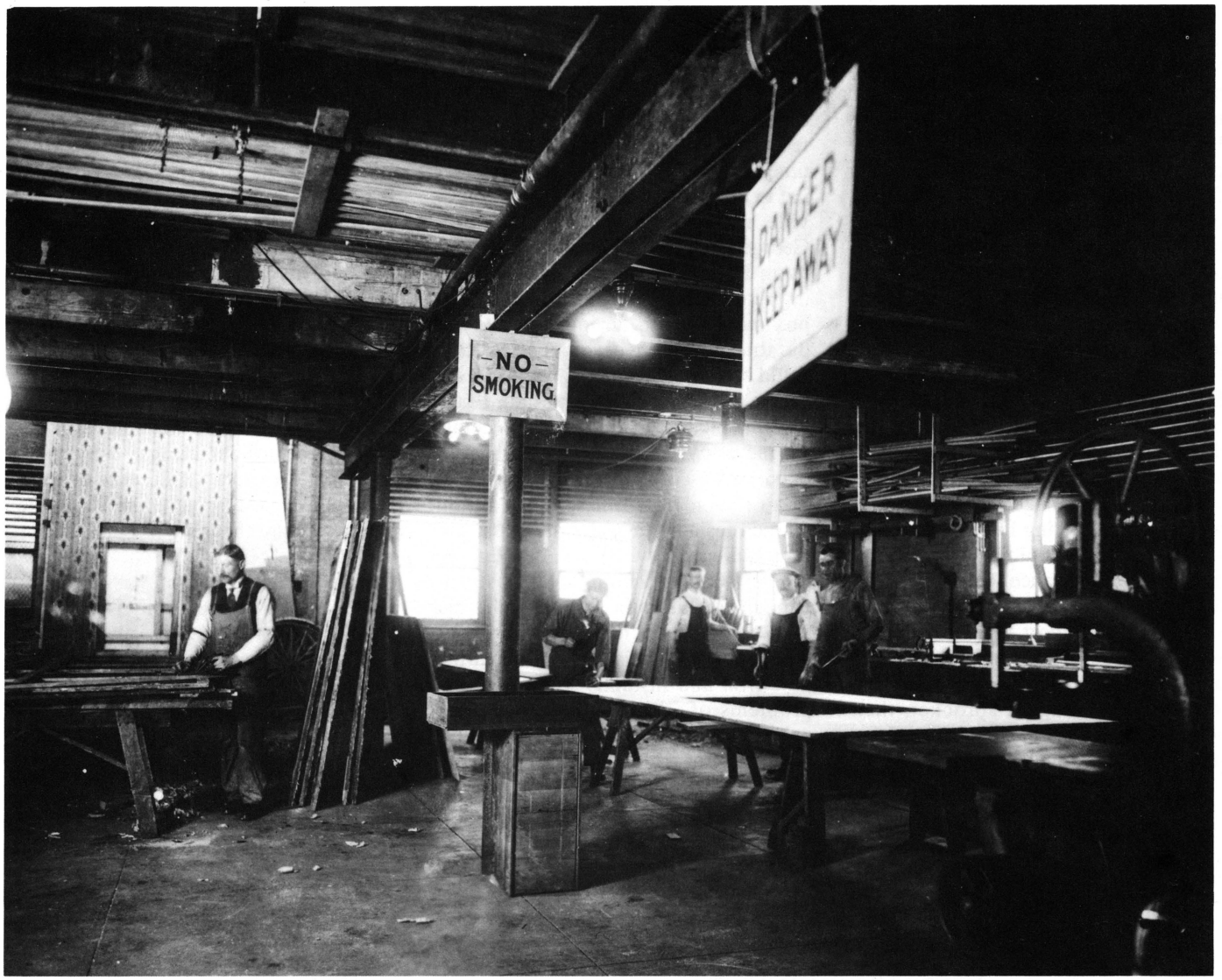
The story of Edison's invention, marketing, production and placement of his KINETOSCOPE has been well covered by other sources for almost a century. Yet all of these reports are skewed for the simple reason that they are reporting about one invention when they really meant another. It is true that the Edison KINETOSCOPE was the first viable motion picture machine and led through successive developments and changes in format to the creation of the "movies" and motion pictures, America's most significant original art form that itself quickly led to an international industry. But that was never Edison's original intention. The KINETOSCOPE was created as a coin machine, and all of its support systems were based on that concept. It was not Edison that converted the nickel-in-the-slot idea to project films in dedicated theaters but others who stretched his ideas and forced him into ventures that changed the course of his inventions which, by virtue of his stature and patent control, placed Edison in the driver's seat of an industry he never envisioned. Yet the story of the KINETOSCOPE as a coin machine—and not merely as a stepping stone to something else—is an important historical sidelight onto itself, and one largely ignored in the bigger picture of its advanced development. Briefly, "In 1887, Thomas A. Edison and his assistant, William Kennedy Laurie Dickson, began work on a combination machine for seeing and hearing... (and) evolved the KINETOGRAPH camera. This practical machine may, without too much fear of contradiction, be said to have inspired the construction of the Lumiere, Paul, Armat and K.M.C.D. motion picture machines, which in turn may be identified as the key machines used in helping lay the foundations of the vast motion picture enterprises we know today. From 1887 to 1894, Edison and Dickson evolved the KINETOGRAPH camera; and the KINETOSCOPE, a peep show machine, used to view the motion record pictures taken by the KINETOGRAPH. The years 1894-1896 saw work on, and development of, a series of machines, both American and European, which could project the motion record pictures on a screen for many people to see at one time. And the years 1896-1898 saw the motion pictures achieve a considerable popularity both in the houses where they were projected on a screen, and in the parlors where they were viewed in peep show machines."[99]



Daring and leggy for its day, Annabelle-The-Dancer — Annabelle Whitford Moore — executes a twirling spin in Serpentine for Dickson's KINETOGRAPH camera at West Orange, 1894. It made her the first darling of film, viewed through a peep hole. Bueschel Collection.



Thomas R. Lombard, far right, exclusive distributor of the Edison PHONOGRAPH through his North American Phonograph Company of New York, in his offices at the Edison phonograph exhibit at the World's Columbian Exposition in Chicago in 1893. Lombard planned to exhibit a bank of Edison KINETOSCOPE machines at the fair, but they weren't ready in time. Terry Ramsaye Estate.



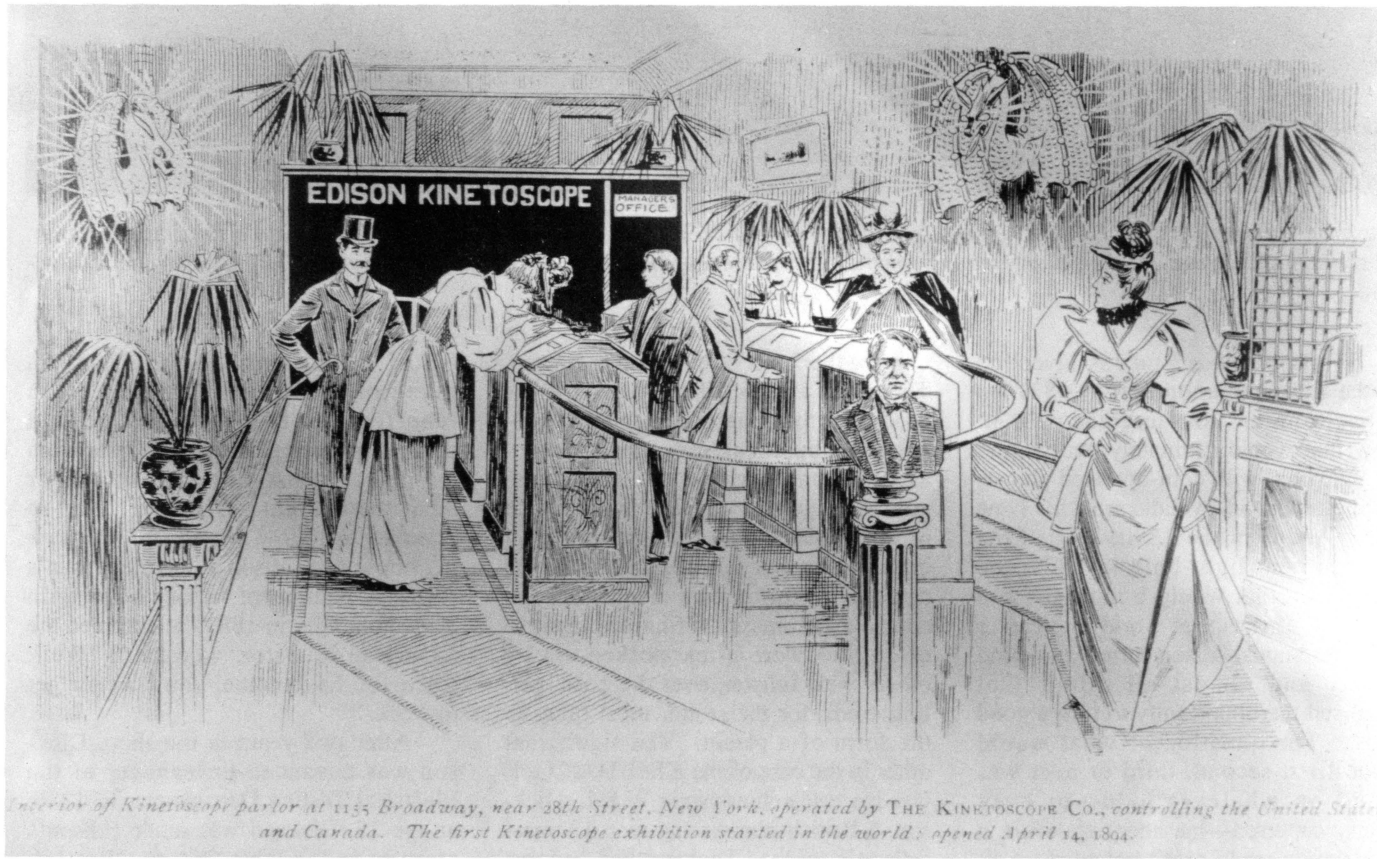
The prop shop supporting Edison's (actually Dickson's) "Black Maria" Kinetoscope Theatre, the world's first movie studio. Edison, an ardent non-smoker, didn't want smokers in his presence, thus the ever present "No Smoking" sign. Bueschel Collection.

World renowned for his invention of the tinfoil phonograph in 1877—a device from the coin machine point of view that would ultimately evolve into the juke box, with coin-operated phonographs produced by Edison in his New Jersey shops in the 1890s — and the incandescent light bulb in 1879, the conception that would bring light to a darkened after sunset world, the clever and cupidinous Edison turned his mind to any and almost all things that promised the opportunity to turn a good buck. The question of what would come first, second, third or ever was based on whatever held—or even briefly captured—his attention while it displayed a ready profit potential. Edison was interested in business as much as he was in invention, so the competition for the fruits of his mind was keen. There was always a lot going on in his head. For that reason Edison hired consultants, business managers, design assistants and others in droves to maintain, manage and develop the issuance of his intellect. The net result was that others often acted in his name. In the case of invention this meant that the course and sometimes final expressions of an idea were often worked out by others with Edison, ever the boss, getting credit for the result, most often in the form of a patent. The significant other in the case of the KINETOSCOPE was his research assistant W.K.L. Dickson, a British-born young man 13 years Edison's junior. Dickson had become fascinated with Edison and his inventions as a teenager in England, and once out of school wrote to the American inventor offering his aid. Edison rebuffed him in a letter, and like a groupie gone to glory with a letter from the object of his worship—no matter what the content—Dickson sailed to America to follow his dream. Presenting himself to Edison at the older man's electrical equipment factory building in New York City in 1881, he charmed the American inventor, who said, "Well, since you have come, you'd better get to work."[100]

After two years in the shop, Dickson was advanced to manager of the Electrical Testing Department. In 1886, at age 25, Dickson was made Edison's assistant in the West Orange, New Jersey research labs. His first major assignment was a study in electrical ore

smelting, with a side task, in Dickson's words, "...to combine Mr. Edison's phonograph with a practical zoetropic moving figure device,"[101] an idea that Edison thought would complete the potential of the phonograph. Edison's first approach was to take tiny pictures on a small photosensitized cylinder and revolve it like the phonograph to allow a viewer to see the action through a microscopic viewer. It didn't work well. Edison submitted idea after idea to Dickson, telling him to try each one (with Dickson pasting each one in the Edison laboratory experiment record books where they can be seen to this day at the Edison National Historic Site, administered by the National Park Services, at West Orange, NJ). The scale was increased, taking larger pictures on strips of heavy celluloid, with notches on the edge to advance the film through the new camera. Except the fragile slabs were too short to include much action. Dickson improved the process by putting perforated holes across the top to feed through a sprocket, then added perforations at the bottom for a steady feed. In spite of the attention, by the summer of 1889 the project was still at dead center.

In one of those remarkable coincidences of fate that have synergistically fed invention over the years, at the very time that Edison and Dickson were trying to develop a camera that would provide an extended record of motion, George Eastman of the Kodak Company in Rochester, New York, was seeking a solution to charging his idea for a box camera with an inexpensive yet durable photosensitive substrate that could be provided in rolls. He had used paper, but it often tore and didn't provide the picture quality he was seeking. Trying a myriad of approaches he hit upon the idea of a flexible yet thin sheet of a celluloid-type film, produced from a liquid resin spread on a flat glass, and then pulled off when dry. Producing the new Eastman Film in lengths long enough for his rolls, it was found the film could be chemically spliced for longer lengths. Edison heard about the new film and instantly knew that the problems of filmed motion had been solved. Edison quickly worked out a stack of instructions and asked Dickson to go to Rochester, get samples, and learn how the new flexible film was shot and processed. Then, to bask in the glory of world attention, Thomas A. Edison and his young wife set sail for France and the Universal Exhibition in Paris on August 3, 1889. The Edison exhibit at the fair, built around the exciting developments in electric lighting since its introduction only a decade earlier, was a popular exhibit, heightened by the arrival of the inventor. While he was there Edison marvelled at Alexandre Gustave Eiffel's almost thousand foot iron tower in the center of the city, considered the interest of a motion picture depicting a ride up its hydraulic elevators with scenes of Paris from above, and wrote home about the lifeless pictures hanging in European art museums. Meanwhile, back in West Orange, W.K.L. Dickson had been left with the final instruction "That's it—we've got it—now work like hell."[102] An Edison lab purchase order to Kodak, dated September 2, 1889, obtained the first samples of the film, with Dickson cramming all of his inventive capability and practical production knowledge into



The toast of New York! Andrew M. Holland's franchised Kinetoscope Parlor — the first of its kind — opened on April 14, 1894, eight days after the machines were delivered. It was located at 1155 Broadway, near 28th Street. Note the bust of the "Wizard" at front. Edison's name and face were a draw. Courtesy Edison National Historic Site.



THE KINETOSCOPE ON EXHIBITION.

The early Kinetoscope Parlors had non-coin machines. Viewers had to pay a cashier 25¢ for a ticket to view a machine controlled by an operator. The Electrical World, June 16, 1894.

the little time left to him to work out the details. In the process he built a special photographic building to take the pictures and then let Edison know he had something to show him when he got back.

Bored with travel, and missing his lab, the day his ship docked two months later on Sunday, October 6, 1889, Edison headed straight for the shop, only to be startled by the new building. He hadn't authorized it. Dickson was there, working, stammered through its explanation, and took the boss up into the attic where, in the darkness, a light flickered on the far wall "...when Mr. Dickson himself stepped out...raised his hat and smiled, while uttering the words of greeting, 'Good morning, Mr. Edison, glad to see you back. I hope you are satisfied with the KINETOPHONOGRAPH.'" Dickson had synchronized the film with an Edison phonograph, making the very first filmed movie a talking picture. The older man was both pleased and pragmatic. How in the world would they ever make money on a system as delicate and open as this? Dickson had the answer. It would be a peep show, self contained in a box in which the moving film would advance past a lens. One look through the lens convinced Edison. The light control was far better than the projected image, the entire system was protected, and no one could see it free. By putting on a coin chute it would take a nickel to see the action inside. Thus the sprocketed film KINETOGRAPH camera and its companion KINETOSCOPE peep show were born, only it would take another four years to commercialize the system due to Edison's lack of attention.[103]

To Edison the KINETOSCOPE was a matter of simple economics. Why show poor pictures on a screen or wall where all sorts of people who didn't pay for the privilege could see it when hundreds to thousands of people would willingly pay in coin to see something no one had seen before. Although he had no prior connection to the embryonic coin machine industry, he was very familiar with its precepts based on the inordinate amount of press the new industry received in the American scientific press. But the moment the KINETOSCOPE was a viable fact, Edison lost interest and turned his mind to other things, including telephone transmitters, the promotion of the positive power of DC current over the safer AC current advocated by his former employee Nikola Tesla and new lighting among other projects. It was up to Dickson to clean up the act. Sure, Edison showed the device off to visiting friends and business associates, but it never held a top priority for in his mind it was more toy than tool. It was also a shop secret. With no attempts to wrap up one of the "Wizard's" greatest contributions to mankind—other projects were more important—its method of operation was hidden from those who saw it. And it was that operation that would hold the secret to its success and reveal the genius of William Dickson. What the younger man had done was string an endless fifty-foot loop of positive film back and forth over a series of parallel spools feeding the viewed picture over two sprocketed wheels at the top under the viewer. The next step was to take the prototype KINETOSCOPE NO. 1 of October, 1889 and refine it to a working machine. Through trial and error, fitting it in among other assignments at the Edison laboratories, the concept was completed and application was made for a patent in Edison's name on August 24, 1891. In its patent the experimental KINETOSCOPE included applications and claims beyond the original as well as beyond the models that would later be produced, while at the same time the principles of motion picture photography and viewing were clearly explained. "The present invention relates to apparatus for using photographs which have been taken in rapid succession of an object in motion, by means of which a single composite picture is seen by the eye, said picture giving the impression that the object photographed is in actual and natural motion. The film on which a large number of photographs of a moving object have been taken in such a manner that any two successive pictures are almost identical in appearance...is passed back and forth over rollers at the top and bottom of the inclosing case...the ends of the film being connected so that the film forms an endless band or belt. Above the film are suitable lenses...and a sight opening



The second Kinetoscope Parlor opened in Chicago in May, 1894, on the street level of the Masonic Temple Building, built two years earlier and the tallest building in the world at the time. Within weeks COIN KINETOSCOPE machines replaced the 25¢ "Universal" models. Bueschel Collection.

through which an observer can look to see the reproduced picture. I propose in some cases to use a film on which pictures have been taken stereoscopically...in pairs side by side on the film. (There) is a screen on which the picture is projected. This screen may be white, or preferably, may be colored to give the picture the appearance of a colored picture; for example, if the picture shows sky and earth, the upper part of the screen may be colored blue and the lower part brown, and it may be otherwise colored for other objects. The reproduction of stereoscopic photographs of moving objects gives a very vivid impression of movement, and the coloring just described adds to the realistic effect."[104] Interestingly, in the patent application there was no attempt to include the possibility of an openly projected picture.

The peep show patent may have been forced by publicity, for in spite of the lab's reluctance to refer to Edison's pictorial toy, the national magazine *Harper's Weekly* blew its cover in a 2-page spread in the June 13, 1891 issue based on material obviously supplied by Edison himself. Patent law being what it was, and is, Edison only had a year to apply before it became public domain. Yet when he did and his attorneys suggested added coverage in Great Britain and France, Edison asked "How much will it cost?" They replied, "Oh, about $150." "It isn't worth it," snapped Edison, and the moment passed.[105] It would be a costly mistake. But there were enormous financial advantages to both the publicity and the patent. It brought the KINETOSCOPE to the attention of a group of men willing to underwrite its commercial introduction, taking it out of Edison's promotional hands while asking that he manufacture the machine and the motion pictures for their exclusive usage. It gave Edison the profit and eliminated the risks. In the parlance of modern business it was an Evergreen deal, and Edison went for it. With that the motion picture machine moved out of the Edison Laboratories in West Orange to become a product of the Edison Manufacturing Company arm of the Edison Phonograph Company in the large plant at Orange, New Jersey. Except, due to its new high technology, it wasn't all that easy.

Entrepreneurs Norman Charles Raff and Frank R. Gammon were hardly strangers to risk, with Gammon taking the leadership role in organizing a syndicate to introduce and profit from the KINETOSCOPE. By the end of 1891 planning was well underway for the greatest of the world's fairs, the World's Columbian Exposition scheduled for Chicago in the summer and fall of 1893. Who knew at the time that 1893 would be a watershed year for the second of America's severe Depressions following the Civil War, or that a rash of other coin machines would be introduced at the fair. Gammon only knew what he felt, and he felt great about the money-making possibilities of the KINETOSCOPE. Appointed as the assistant chairman of the Awards Committee of the fair, throughout 1892 Gammon was closely associated with the exhibitors, and that included Thomas R. Lombard, of the North American Phonograph Company of New York, the exclusive American distributors of Edison's phonographs. Lombard was dedicated to giving an outstanding exhibit of his products at the fair, both to sell phonographs and win an award. In that light, he worked closely with Gammon and was soon waxing eloquent over something he had seen at the Edison Laboratories. His attempts at explaining motion pictures were feeble, but they were enough to excite Gammon, who later told his brother-in-law Norman C. Raff of Canton, Ohio. Raff had made his money as a banker backing the California oil fields, and had both disposable income and time. After a few meetings with Lombard, he too was taken with the opportunity. So much so, early in 1893 he went to see Edison in East Orange. Could commercial models of the KINETOSCOPE be ready in time to introduce the new machine at the World's Columbian Exposition four months hence? Why not? Perhaps it was wishful thinking on Raff's part, or perhaps Edison thought it could be pulled off. In any event, it was W.K.L. Dickson's job to do, not Edison's. So the inventor and the promoter struck a deal, and The Kinetoscope Company was formed with the exclusive rights to operate and sell geographic franchises to others to exhibit the machines. Raff, Gammon and Lombard were its principals, with the offices of the new coin machine operating company located in Chicago to be close to the action.

In a sudden flurry to try and meet the deadlines, with Thomas R. Lombard planing his exhibit space at the fair to hold a bank of the machines, W.K.L. Dickson built the world's first motion picture studio to get started on film production. Officially called the Kinetographic Theatre, its darkened shell and light proofed interior was quickly nicknamed the "Black Maria" after the black police paddy wagons that scoured



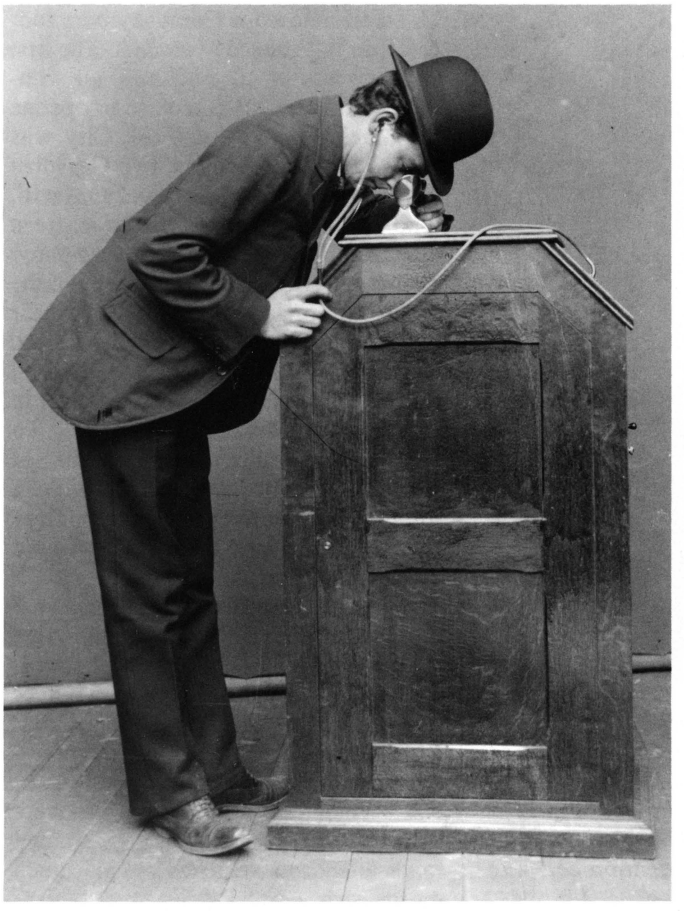
The franchised The Kinetoscope Company Parlor in Cleveland was located in the Arcade Building on the ground floor, starting right out with coin-ops version. The building still stands in the heart of Cleveland's retail sales district. Bueschel Collection.



Opening on June 20, 1894 at 946 Market Street in the Baldwin Block building in San Francisco, Peter Bacigalupi's Edison's Kinetoscope, Phonograph and Graphophone Arcade made early use of the location definition name "Arcade." The bank of KINETOSCOPE machines all carried panels saying "Edison's latest invention THE KINETOSCOPE." Note the curious ladies at the front door, watching the photographer. The peacock on the wall added a blaze of color. Edison coin-op ear plug PHONOGRAPH is at left. Courtesy Edison National Historic Site.

New York City streets looking for drunks and other anti-social night people. Slapped together in jigtime, including a rotating stage that turned to face the sun through an opened roof, the facility was on line February 1, 1893. Trained bears, dancing girls, dog acts and Indians ran through the studio while cameraman Dickson put all of them through their paces, coming up with fifty-foot films for one minute showing. Even Buffalo Bill emoted for Dickson's camera. But over at Edison Manufacturing Company in West Orange, production had stalled. Other projects had a higher priority and, in Edison's own words, all the the bugs weren't ironed out in time. When the fair opened in May, 1893, Raff and Lombard were left high and dry. They waited in vain as each day ticked by, and no KINETOSCOPE machines were forthcoming. What made the situation even more hurtful was that the less inventive Muybridge ZOOPRAXOSCOPE and Ottomar Anschütz's TACHYSCOPE, the latter operating as a coin machine in a small booth located under a railroad overhead, were being exhibited on the grounds while the revolutionary KINETOSCOPE remained a secret invention. When Edison himself visited the fair at the end of October, soon before it closed (going incognito so he wouldn't be recognized, and mobbed), a reporter in the know asked him, "Have you any more wonders like the phonograph in the experimental stage?" Edison replied, "No, nothing but the KINOGRAPH (with the reporter not getting the name right) which is now almost perfected. It reproduces, by a rapid succession of small photographs, every motion of an object. It was very hard to get the exact grimaces of the face or the clear workings of a man's fingers playing the piano, but we perfected it at last. I was very anxious to have one on exhibition at the fair, but we will not have it in time."[106] When it came time to pass out the awards, even though committee member Frank Gammon had a vested interest in a much advanced machine, the Muybridge ZOOPRAXOSCOPE got an honorable mention with the idea of moving pictures all but ignored.

It would be another year before the KINETOSCOPE came to market, but when it did it was an overnight success. The promise envisioned by the founders of The Kinetoscope Company bore sudden fruit in patience rewarded. The first delivery was of 10 machines, all without coin chutes. A franchise to operate the machines in New York City was sold to Holland Brothers, two Canadian businessmen from Ottawa, Ontario, who had signed on to be the eastern agents of The Kinetoscope Company. Andrew M. Holland took delivery of the machines on April 6, 1894 at their Kinetoscope Parlor at 1155 Broadway, near 28th Street, the first dedicated facility to amusement machines, thus in effect the first coin-op arcade. To heighten the excitement "The front of the establishment was garnished with an illuminated electric dragon with fiery eyes. That was, of course, the symbol stamp of Edison wizardry supreme."[107] The electrical graphics were repeated inside of the lavishly decorated rented storefront, with a bust of Edison prominently displayed at the head of two lines of five each KINETOSCOPE machines. With no coin chutes in place, the brothers made arrangements to sell 25¢ tickets to enter the parlor with onlookers seeing as many movies as they wanted to, as attendants switched the machined on for each viewer. With great fanfare and press the parlor opened a week later, on Saturday April 14th. It couldn't have been more successful. For weeks thereafter, through the hot summer, people waited in long lines to get in and see Edison's pictures that moved. The New York success opened the location floodgates. A few weeks later, in May, the next Kinetoscope Parlor opened in Chicago on the ground floor level of the tallest building in the world. Located on the northeast corner of State and Randolph, across the street from the city's fabled Marshall Field's and Company department store, the Masonic Temple Building was the pride of the city, and a premier location. The first KINETOSCOPE models placed there were the non-coin "Universal" model, with a 25¢ ticket admission to the parlor. These were quickly replaced with the first of the COIN KINETOSCOPE models, stand-alone nickel play versions, with all subsequent parlor models delivered as coin machines. The next parlor opening was in San Francisco on June 20, 1984, expanding the Edison Phonograph Parlor run by Peter Bacigalupi to create the "Edison's Kinetoscope, Phonograph and Graphophone Arcade" (the first use of the word with coin machines) in the Baldwin



Edison inventiveness in the interest of commercialism at work. The Edison Manufacturing Company KINETOPHONE of 1895 added sound to the sights of the KINETOSCOPE peep show, all for a quarter. Less than 50 were made. Courtesy Edison National Historic Site.



The Edison Kinetoscope Parlors came in for their fair share of admiration and humor. This "farmer story" cartoon was in a 1900 issue of Judge, a national humor magazine. Judge's Library, FUNNY GRAFS, November 1900.

Block at 946 Market Street. This was followed by a Boardwalk location at Atlantic City on June 26th, adding KINETOSCOPE machines to the Columbia Phonograph Parlor where a film of the hoochie koochie dance by Little Egypt (a sellout Midway Plaisance sideshow at Chicago's Columbian Exposition the year before) was the crowd favorite. The Kinetoscope Parlor was soon a national rage, with every major city and many smaller towns having their own facility. Cleveland had one on the ground floor level of its Arcade Building and in St. Louis the Edison Phonograph & Kinetoscope Parlor was located at 911 Olive Street.

Enhanced models soon made their appearance. An added phonograph option was offered late in 1894 to create the MUSICAL KINETOSCOPE, leading to the development of the KINETOPHONE, a sound and sight version that added hearing tubes to the viewer model. Coming out around April 1895, the KINETOPHONE was less than a raging success, with only about 45 produced, whereas KINETOSCOPE production reached almost a thousand units between 1894 and 1896, with only a few produced after that until the machine was out of production in 1899. A long play version called the SPECIAL KINETOSCOPE "Exhibition Model" was created in August 1894 to the explicit instructions of Grey Latham and Enock Rector, two of the original switcher attendants at the first New York Kinetoscope Parlor at 1155 Broadway, with the film capacity tripled to 150 feet in order to show a three minute prize fight. Latham and Rector, Latham's brother Otway and Rector's friend Samuel J. Tilden, formed the Kinetoscope Exhibition Company, opened up a new parlor at 83 Nassau with 6 of the larger machines, and cleaned up.

Meanwhile the KINETOSCOPE was was about to burst beyond American shores and go international. Acting as agents, Holland Brothers sold some machines and film to two Greek entrepreneurs, who promptly took them to England. It was the beginning of the British film industry. Another franchisee, Werner Brothers, picked up their equipment in New York and opened a Kinetoscope Parlor at 20 Boulevard Poissonuiere in Paris, France, in October 1894 effectively starting French film. Pressure for more machines in England, with available American stocks oversold, turned the Greek purveyors to British sources for copies of the machines. Discussing the matter with Robert W. Paul, a London maker of scientific instruments, Paul explained the difficulty of reproducing patented goods, but promised to look into the situation. Making the incredulous discovery that Edison hadn't patented his machine in Great Britain or France, and that the only thing even close in British patent art was the German COIN ELECTRICAL TACHYSCOPE being made domestically by the Electrical Wonder Company since 1892, Paul promptly copied one of the imported machines and put it into production at his partnership firm of Acres and Paul in August 1894. Meeting existing orders, Paul kept the pirated KINETOSCOPE in production, opening his own Kinetoscope Parlor on the exhibition ground in Earl's Court, London (where another copy of an American amusement device was taking shape, with the assembly of the enormous 1,200 passenger, 1,500 ton and 276 foot high Graydon Wheel designed by American engineer J. W. Graydon to order for a

young Devon engineer named Walter B. Basset, making it a British copy of the world's first Ferris Wheel, a 56 ton, 250 foot 1,440 passenger monster built on the Midway Plaisance of Chicago's 1893 world's fair), and started meeting the overflow orders from the continent of Europe that Edison couldn't touch by virtue of cost and oversold production. By the spring of 1895 Acres and Paul had developed their own camera, to counter the refusal of the American maker to provide films for the British made machines, also putting them in the film production business. Edison's official agents in England, the Continental Commerce Company, couldn't stem the tide, with London alone having five Kinetoscope Parlors by the summer of 1895, with more of them using the copycat models than the American original. Acres and Paul even made improvements in the KINETOSCOPE, almost doubling film lengths to provide a longer peep show for the money. Edison's 1891 $150 error in patent judgement was costing him dearly.

The success of the KINETOSCOPE was so wide and rapid, it soon sowed the seeds of its own destruction. The public couldn't get enough, and some of the exhibitors wanted more. If they could get a nickel for every one minute viewing of a KINETOSCOPE, why not get a nickel each from a room full of people that could see the same thing projected on a screen, or maybe something even longer once the film length restrictions of the coin machine cabinet were removed. It was exactly the opposite of Edison's thinking, but an idea that was gaining a lot of support in spite of the inventor's unbending attitude toward the suggestion. The pressure wasn't just local; it was international. New people entered the fold as well as experienced hands. The movement actually started in France when the two Lumiere brothers, August and Louis, having worked in still photography for some years in their father's photographic equipment factory in Lyon, saw their first demonstration of the KINETOSCOPE in the Werner Brothers parlor in Paris. Louis, the youngest brother who had just reached 30, envisioned large pictures projected on a wall for the benefit of an audience rather than restricting viewing to a one-on-one relationship with a box. Except it didn't work. Cranking the Edison-type films past a projecting lens blurred everything. Enlisting the aid of his older brother August, two years his senior, the two Lumieres dove into solving the problems of projection. They quickly learned that the hand turned continuous movement of film as projected on a white panel inside the KINETOSCOPE wouldn't work over longer distances. But a steady, intermittent speed would. Experimenting with shutter and projection speeds both for their camera and hand crank projector, they settled on 16 frames a second. Regarded by many as the very first motion picture system, their 16 frame speed later became the standard of the industry. Applying for a patent in France in February 1895, the





The paid-for product-plug in movies isn't a new idea. Edison wasn't above promoting everything he could in his KINETOSCOPE films. These simulated electric street car interiors (also an Edison product) show car cards that plug Edison phonographs, KINETOSCOPE films and Edison molded records sold by the National Phonograph Company in an early film, while a later film plugs food products and S. Lubin of Philadelphia, an early Edison projected film distributor. Use of the names and logos also prevented pirating of the films. Bueschel Collection.

Lumiere brothers held the first select exhibition of their newly named CINEMATOGRAPH at their father's factory in Lyons on March 22, 1895. It is the generally acknowledged beginning of motion picture history. For almost a year, they cranked out their moving films for industrial groups and scientific societies across France before they ever considered going commercial. The CINEMATOGRAPH went public for the first time on December 28, 1895 in a showing at the Grand Cafe on the Boulevard des Capucines in Paris, and the citizenry of France had a new toy in this age of wonder, with films as exciting as a man smoking a pipe. Lumiere showings reached England the next February and the United States by the summer of 1896.[108]

They barely bested their competition and in fact reached American shores after projected films were already a commercial reality. The pressure to show more to more people, thereby making more money, built up fast. Partners Grey and Otway Latham and Enoch Rector, making money hand over fist with their "Exhibition Model" long play SPECIAL KINETOSCOPE machines, imagined what they could do if they could show their fight films to a room filled with a paying crowd. So they decided to become inventors and work out a way to do it. Financed by the Latham family, a new venture was formed as the Lambda Company Inc. (Greek for "L", the first letter of the family name) with development centered in the firm's shop at 35 Frankfort Street. Young men about town Grey and Otway Latham, Broadway boulevardiers at heart, fiddled with the project but most of the work was left up to Rector. The elder Latham, known as the Professor, wanted to hedge his bets against failure, so he approached William Kennedy Laurie Dickson at Edison Laboratories for assistance. Dickson, in what had become a rare moment in getting Edison's attention, asked his mentor if he could aid Latham. Edison said he couldn't because he, Edison, was under contract to The Kinetoscope Company for all moving film developments. But Latham came back and offered the carrot of a one-quarter share in the success of the venture. So Dickson started going to New York to consult on the project, only he acted uppity. Otway Latham was soon complaining to his father that Dickson only gave advice in French, and no one could understand him. And then Dickson crossed the wrong man. Not at Lambda, but at Edison. William E. Gilmore, the new General Manager at the Edison Labs, had been spying on Dickson. A year to the day after starting at West Orange, on Tuesday, April 2, 1895, Gilmore hauled Dickson into Edison's office and accused him of duplicity in serving two masters. Edison replied, "I don't believe a damn word of it!" Dickson assured him it wasn't true, and said either he or Gilmore should leave Edison right then



Edwin Hill Amet's laboratory in Waukegan, Illinois. After making coin-op exhibition machines and scales, Amet got interested in projected films in July 1894 after seeing a KINETOSCOPE in Chicago. The high window at the left was the top of a tower used to hang motion picture film the height of the building to dry. Lake County Museum, Lake County, Illinois.



Edwin Hill Amet's travelling motion picture exhibition, projecting films made in Waukegan on Amet's Chicago Recording Scale Company MAGNI-SCOPE projector, introduced in July 1897. This is the ""War Show" purporting to show the naval battles of Santiago, Cuba and Manila in the Spanish-American War of 1898. The film was faked, using models. Lake County Museum, Lake County, Illinois.

Samuel Nafew Co., 392 Broadway, New York, and 167 Dearborn Street, Chicago.

THE AUTOMATIC CHICKEN.

MADE IN GERMANY.

A Marvelous Piece of Workmanship and a New Departure in Coin-Controlled Machines.

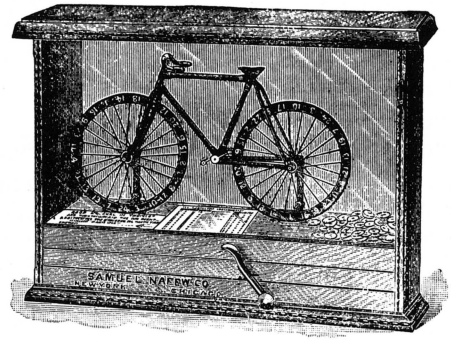


Life-like in action.
Cackles and flaps its wings.

Chicken three times the natural size and life. like imitation, being decorated with natural feathers. The chicken rests on a beautiful nest made of metal. The body of chicken will hold one hundred eggs (natural size. which can be filled with candy, gum, chocolates, jewelry, bon-bons, or other dainties. The popularity of the machine can be increased by putting a special prize in the golden egg. These machines are particularly adapted to department, candy or notion stores, or wherever women and children congregate. Will be especially desirable at picnics, church fairs, or other entertainments.

Price of Machine, $50.00. Eggs, **$15.00** per 1,000

THE "L. A. W." IS ALL RIGHT.



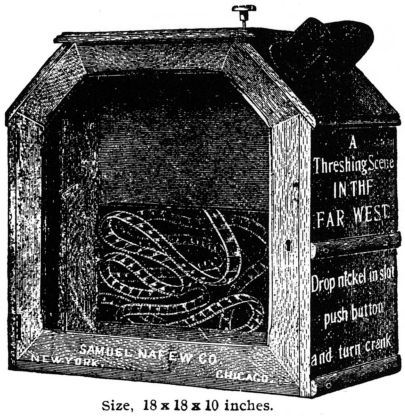
No blanks. All rewards paid in cigars or their equivalent. An extra combination is also furnished with each machine in case you wish to pay the rewards in 10c. cigars. Either combination is guaranteed to net 7½ or 12½c, for each five or ten cent cigar given. Two sets of combinations with each machine.

The combination play on the bicycle is made by dropping a nickel in the slot, turning the lever to the right and releasing it, when both wheels will revolve forward. The rims of the wheels are each tabulated from 2 to 24, but not consecutively. When they stop the sum of the two numbers indicated determines the reward, according to the list adopted as regular and which is shown on base between the wheels.

DESCRIPTION:—This is a Miniature Bicycle Complete, mounted on nickel plated standards. The frame is solid brass. black enameled. Handle bars, cranks and pedals are nickel plated and the hand holds and saddle are oxidized. It has a full barrel hub, nickel plated and ball bearing. Cabinet is quartered oak, highly finished, and decorated with fancy mouldings, which adds materially to its beauty and finish. Dimensions of Cabinet—19 inches long, 13 inches high and 5 inches wide. Shipping weight 14 pounds; net weight, 11 pounds. **PRICE. $15 00.**

THE HAND KINETOSCOPE.

GREATEST, EASIEST AND QUICKEST MONEY MAKER IN THE WORLD.



Size, 18 x 18 x 10 inches.

Is a moving picture machine showing each subject as if it were alive and in real life. Every move can be seen as plainly as if you were watching the subjects themselves. IT USES ANY STANDARD MAKE OF FILMS. The film moving mechanism does not injure the film, and the results much better than the **$150** Electric Kinetoscope. The nickel-in-the-slot attachment is simple, and so constructed that it is impossible to operate machine without a nickel. We guarantee the workmanship and material on this machine to be first-class throughout, and will gladly ship it C. O. D., privilege of examination, on receipt of **$10.00** to guarantee express charges. Place one of these machines in a store, saloon, hotel, depot or any public place, with a good prize fight, Midway dance, foreign street scene, bull fight, where the bull kills the horse, etc., and you will be surprised at the receipts.

If in good location will pay for itself in two weeks.

Drop a nickel in the slot and by turning the handle or crank puts the machine in motion. French plate glass covering the entire one side of the machine, it is therefore free from any complicated electric connections for lighting connections.

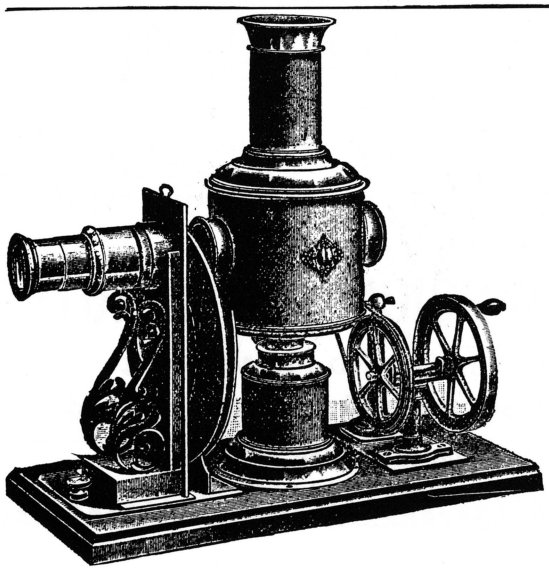
We carry in stock a full assortment of EDISON FILMS at lowest market prices.

NEW HAND KINETOSCOPE.

With Nickel-in-the-Slot Attachment.

$30.00 COMPLETE WITH EDISON FILM.

No Battery. No Electricity. No Expense to Run.



PARLOR VITOGRAPH

—AND—

Magic Lantern Combined.

A French introduction in an instrument offering amusement and enjoyment to the home, delights and instructs the little ones. This machine is designed particularly for home entertainments, small parties, sunday schools, and can be used for exhibition purposes at a profit.

Adjust the machine (full printed directions with each outfit). Turn the crank and watch the pleasing effect on the screen faithfully reproducing the motion just as in life, of beautiful professional dancing, in variety. The President out for a drive on Pennsylvania Avenue. Fire engine on a full run. Busy scenes on Broadway, New York. Bathing at Newport. Foreign news, etc. A perennial source of amusement as new discs of subjects can be added at any time, at nominal prices.

The principal features of this Vitograph are that it is a COMPLETE MAGIC LANTERN, and with its new attachment, produces the LIFE-LIKE PICTURES, similar to those shown by the famous "Kinetoscope." This improved attachment places the VITOGRAPH at the head of ALL magic lanterns.

To use the instrument as a magic lantern, simply remove the guide plate from the groove on the standard and put in side-holder to hold slides, a complete magic lantern outfit of which is furnished with THE PARLOR VITOGRAPH.

With each outfit we furnish six discs, covering good variety of subjects.

PRICE, $12.00.

Copycat Kinetoscopes became common, usually countertop models that avoided the Edison patents. This reproduction of a page from the Samuel Nafew Co. catalogue of 1897 shows the firm's HAND KINETOSCOPE of 1896. Feature indicated is a threshing scene in a western territory. Instruction panel states: "Drop nickel in slot, push button and turn crank." Bueschel Collection.

and there. Edison didn't say a word, making the silent seconds seem like hours. So Dickson resigned.[109] The resulting system, the Lambda PANTOPTICON, was shown to the press on April 21, 1895 — less than 3 weeks after Dickson was out of Edison — with its first commercial public showing on May 20, 1895. While it was a courageous idea it wasn't particularly effective. The Lathams had figured out that the moving film should be shot in stop motion, but they projected in a continuous movement, making everything fuzzy. So the venture failed. How much of the PANTOPTICON was Dickson's idea is a moot point, and most of the work actually seemed to be Rector's (who developed a film tension relieving idea called "the Latham loop" that became a basic film projector precept for many years). Whatever their contributions, both Dickson and Rector were out of the project by the summer of 1895. The PANTOPTICON might have succeeded with more attention, but the idea was dropped.[110]

It was almost a year earlier that Edwin Hill Amet, the early coin machine maker, entered the field of motion pictures through his Electric Advertising Scale Company in Chicago. Having made a fair success with his POWER STATION, STEAMBOAT and other coin operated exhibition machines, as well as his electrical and musical coin operated scales, Amet was looking for something more adventurous. When he viewed his first KINETOSCOPE machine at a Kinetoscope Parlor in Chicago, he found it. The experience began in July 1894 when "...these cabinet peep show machines appeared here in...a small store on Randolph Street and Clark Street in the Ashland Block (that) was opened in which ten of these KINETOSCOPES with their motion pictures line one side of the room and on the opposite side of the same room were 12 phonograph machines. Both the picture machines and the phonograph were operated by a nickel in a slot. Up here in Waukegan there lived a man named E. H. Amet. He had heard about the picture machines that Mr. Edison was putting out. He investigated and came to the conclusion that the same method Edison had adopted of glueing your eyes to an opening at the top of the box and viewing a tiny picture in motion, while fascinating, was all wrong. He has another idea, and that was to build a machine



KOSTER & BIAL'S MUSIC HALL

Thirty-fourth Street, Herald Square.

KOSTER, BIAL & CO., - - - - Proprietors

ALBERT BIAL, - - - Sole Manager.

W. A. McConnell, - - - - Business Manager.

Week Commencing Monday Evening, April 20, 1896.

Evenings, 8:15 Saturday Matinee, 2:15

THIS PROGRAMME is subject to alterations at the discretion of the management.

1 OVERTURE, "Masaniello," Auber

2 WM. OLSCHANSKY
The Russian Clown

3 CORA CASELLI
Eccentric Dancer.

4 THE THREE DELEVINES
In their original act "Satanic Gambols"

5 PAULINETTI and PICO
The Athletic Gymnast and Gymnastic Comedian.

MONS. and MME.
6 DUCREUX-GERALDUC
French Duettists.

7 THE BROTHERS HORN
Assisted by MISS CHARLOTTE HALLETT
"London Life."

THOMAS A. EDISON'S LATEST MARVEL

8 THE VITASCOPE,

Presenting selections from the following:

"Sea Waves," "Umbrella Dance," "The Barber Shop," "Burlesque Boxing," "Monroe Doctrine," "A Boxing Bout," "Venice, showing Gondolas," "Kaiser Wilhelm, reviewing his troops," "Skirt Dance," "Butterfly Dance," "The Bar Room," "Cuba Libre."

INTERMISSION 10 MINUTES

IN THE GRAND PROMENADE

Dr. Leo Sommer's Blue Hungarian Band

Programme continued on next page.

The printed program passed out at Koster & Bial's Music Hall the night of Thursday, April 23, 1896 when Armat's VITASCOPE — under Edison's name — had its first public showing. KINETOSCOPE films, both original American made and scab English examples, were projected. Bueschel Collection.

for projecting the pictures of the film upon the wall or upon a white sheet. Without losing any time, he proceeded to construct such a machine. By using a simple well-known intermittent device called by mechanics a dog movement, he made rapid progress and more than half completed the projecting machine when the usual thing happened - he was in need of money to complete the apparatus."[111] The man that explained this process of invention was George K. Spoor, of Waukegan, Illinois, a Lake Michigan port city 50 miles north of Chicago, where Amet lived. Speaking to the Waukegan Chamber of Commerce 50 years after the event, Spoor went on to explain his role in bringing the Amet system to the market. "At this time, I was the manager of your local Opera House in partnership with that beloved old man, Samuel Cone. I had just finished counting up the night's receipts for a comedy show that was playing there that night when a man stepped up to the box office and asked for me. I responded and this man explained to me that he was building a machine for projecting motion pictures. I was interested and asked him what he expected of me. He said that he needed money to finish the machine and that if I would furnish the money, he would give me a half interest in the venture. I said 'How much would it take?' to which he replied, 'I don't know but if you will give me $25 now so that I can go ahead, whatever more is needed you can give me later.' I gave him the money and thought I was in the Moving Picture business. Without delay, Mr. Amet went ahead at full speed and during the last of August 1894 the projector was finished. In the meantime, I had secured from the man who operated the slot machine pictures in Chicago two of the films that were used in his machines. With the projector finished and two films in hand, we set the machine up in a building just north of the foot of Madison Street hill, the home of the Chicago Scale Works. After the demonstration that night, there was not much sleep for any of us who had seen the demonstration.

"The very next day, I went to visit the man with the slot machine pictures in Chicago and prevailed upon him to sell me 10 more of his discarded pictures. I paid him $4 each for them. Then I preceded to get out advertising matter for the Great Moving Picture Show at the Opera House at 10-20-30 cents duration of one week. Now the complete running time of these pictures was about one minute each. But Amet constructed a spool bank and by cementing the ends of each picture together, we had the picture in the form of a continuous belt. And when the picture was once placed into the mechanism of the projector, we just kept on running it over and over 7 or 8 times which seemed to be alright with the audience. In between the pictures, when they were being changed, we played a phonograph record and in this manner we managed to grind out a two hour show. It went over big. Our gross for the 6 days was $400. We then moved the same show to Kenosha where we took in nearly $700 more. Now we had a bank roll. There were no more dates played at this time. Mr. Amet had decided to call the projector the Amet MAGNI-SCOPE. He also concluded that the big money to be made was in building these projectors and selling them to travelling show men. It became necessary to build cameras, printing machines and perforating machines. Soon the theatrical papers were carrying advertisements to showmen offering a machine and pictures. They came from all over the country by the hundreds and most of them had to wait from one to three months to acquire their equipment. The pictures that were made during this period...were all in lengths of about two or three minutes each. In each exhibition, the program would consist of numerous and various subjects. Waukegan had an up-and-going picture business. This went on for about 4 years, from late 1894 until early 1898. About the year 1900, Mr. Amet arrived at the conclusion that the moving picture business was just about over. He called me up one day and informed me that he had sold out all equipment, negatives, et cetera to a Philadelphia concern by the name of Williams, Brown & Earle for $10,000 and was through. I expected a share of the sale price. When I inquired about it I was told that I was not a partner. Don't let anyone try and tell you that the first moving pictures were not shown on a screen in Waukegan. They were, for I had something to do with it."[112]

What Amet had done, working alone, was beat everyone else to the punch, making and marketing movies months before the Lumiere brothers in France or any subsequent American efforts. Yet this pioneer achievement was all but lost to history as were Amet's earlier coin machine activities. The main reason for this gaffe in acknowledgement seems to lie in the patent record, the source from which most industrial history flows. In the case of non-patented art any conclusions to be drawn by restricting the study to issued patents will unfairly tilt the results. It wasn't until June 10, 1897 that the first successful papers were filed on a advanced model of the Amet camera, and even then they were issued to Nicolay Nelson of Waukegan (the man that Amet had sold a half share to about a year after he had promised it to Spoor) without naming Amet, although they were assigned to Amet's Chicago Recording Scale Company.[113] More than likely Amet had filed for earlier patents but didn't get them. A search of the applications for 1894 and 1895 will probable reveal their existence and finally and correctly date the beginnings of the projection motion picture industry in the United States. Whatever the date, Amet's contributions were enormous. He contributed reel-to-reel film transport (an invention that might have made Edison's KINETOSCOPE considerably smaller and much more reliable), intermittent filming and projection and, simply, the movie screen. "The great weight of evidence indicates that Amet's projector was the first machine to reproduce filmed scenes on a wall or large screen of any type. This projection of the moving picture made a group audience possible and, therefore, gave birth to the movies as an entertainment industry. Amet also made practical the principle of spacing separate pictures on the film, in order that the illusion given by the passing film was not blurred. Before this innovation the 'moving' pictures tended to run into one another before the viewer's eyes."[114] For all that technology it was the entertainment value, often on the far soft side of pornography, that captured audiences. As the test market movie audiences, Waukeganites and Chicagoans alike were the first to be treated to the new images; "Many old residents remember the days when it wasn't considered quite the thing to do to look into an Edison peep show, or go to see an Amet-Spoor movie. 'The men folks would come back from a trip to Chicago and look positively wicked as they whispered to a friend of theirs that they had

seen one of those new movie pictures in the Big City,' one elderly lady said."[115] For the first time in history men could watch young women move in the private confines of a box or darkened theatre, something that could not previously be done in polite society.

While Amet developed and continued to refine his equipment, George Spoor learned how to become a movie producer. After splitting with Amet, Spoor teamed up with G.M. Anderson to open up the first major movie studio in the industry. Taking their last initials they called it "S" and "A", making the name Essanay Studios. Some sources have erroneously ascribed the "A" to Amet, or even Max Aronson, the star of the first feature film *The Great Train Robbery*. They discovered Charlie Chaplin and Colleen Moore, made Wallace Beery a star, and even shot some bathing beauty films with Beery's young wife, a part-time extra named Gloria Swanson. Spoor hired a young Don Bell to work around the shop, a later founder of the camera firm of Bell & Howell, and also ran the Spoor chain of 120 movie theaters in the Chicago area, later producing a stereo film for RKO in 1929 under his own patented system. But all that is another story worthy of its own book.

Thomas A. Edison himself was coming under pressure to produce a movie projection system. Norman Raff and Frank Gammon of The Kinetoscope Company were the instigators. Somewhat miffed over Edison's deal with the Kinetoscope Exhibition Company for the longer play machine, and getting requests from their franchisees across the country for an Edison machine that would project films for a larger crowd, Raff got an audience with Edison and presented their request for a PROJECTING KINETOSCOPE. Edison couldn't be less interested and in fact rebuffed him by saying, "If we make this screen machine that you are asking for, it will spoil everything. We are making these peep show machines and selling a lot of them at a good profit (Note: The Edison Phonograph Company was getting $200 for each machine at the time). If we put out a screen machine there will be a use for maybe about 10 of them in the whole United States. With that many screen machines you could show the pictures to everybody in the country — and then it would be done. Let's not kill the goose that lays the golden egg."[116] To add insult to injury Edison then gave Raff and Gammon exactly what they didn't need; another coin machine. It was the KINETOPHONE, a pet Edison project in which he married the "useful" phonograph with the "toy" picture machine. Like many successful coin machine manufacturers for a hundred years hence Edison wouldn't sanction any threat against a hit machine and, while he had his somewhat exclusive distributor's sanction, he shoved another machine down their throats to keep what they had. In essence, Edison was a true coin machine man, protecting his market while debasing any development out of his established field.

But Raff and Gammon and their associate Thomas R. Lombard of the North American Phonograph Company would have none of it. Angered by Edison's intransigence, their halfhearted attempt to promote the KINETOPHONE at the end of 1894 all but doomed the product. Pegged at a hefty $350 per machine, only a few of them made it to the nation's Kinetoscope Parlors. Trapped in an exclusive agreement for their distribution, the Edison Phonograph Company made a stab at subterfuge to create an overseas market for the machine. Only they got sued. Lombard and his North American Phonograph Company sued both "...Thomas A. Edison and the Edison Phonograph Company...to restrain the defendants from selling KINETOPHONES in foreign countries. The complaining company holds an assignment from Edison of all foreign rights for the sale and use of the PHONOGRAPH, with the exception when it is used in connection with toys, dolls, etc. They allege that Edison has infringed on the right by combining the PHONOGRAPH and KINETOSCOPE under the name of KINETOPHONE, and placing it in the foreign market. The defense holds that the KINETOPHONE is a toy."[117] Armed with a sufficiently strong moral position, and a solid belief in their need for a projecting machine, Raff and Gammon finally prevailed. Edison, albeit unenthusiastically, quietly assigned the project to a KINETOSCOPE mechanical underling named Charles H. Kayser and, to get Raff and Gammon off his back, he sent Kayser to work under Edison's payroll in the offices of The Kinetoscope Company in New York, where a large room next to the firm's foyer in the modern Postal Telegraph Building was set aside as the development lab. Neglectfully (perhaps purposefully, so Kayser wouldn't get much help), Edison didn't tell W.K.L. Dickson what he was doing. When Dickson found out early in 1895 he silently fumed while feeling betrayed (This event may have been a major contributing factor to his association with the ill-fated Lambda Company Inc. and the hapless PANTOPTICON) and did precisely what Edison was trying to accomplish. He cut Kayser off from any of his prior work. By April, 1895 Dickson was out of Edison and Kayser wasn't getting anywhere with his experiments at The Kinetoscope Company.[118]

Meanwhile, an interesting thing was happening. Thomas Armat, a Washington, D.C. real estate broker, science buff and part-time inventor, was working out the first outstandingly successful American movie projector. As with many of these projects, its genesis was at the World's Columbian Exposition in Chicago in 1893. Armat had gone to the fair with his brother J. Hunter Armat. Poking around the grounds, they found the small TACHYSCOPE booth under the Illinois Central railroad tracks, each dropping a nickel in the machine to see the show, a circus elephant going through its act. Young Tom remarked, "If you could connect that up with a magic lantern, it would make quite a show." Somewhat over a year later he would make a similar observation, only this time it would lead to action. In October, 1894, after his old friend H.A. Tabb — also an acquaintance of Raff and Gammon, and aware of Kayser's fruitless work at The Kinetoscope Company — extolled the merits of the KINETOSCOPE, Armat replied, "I don't see much in a peep hole machine like that. But I'll tell you there would be a big field for a machine that would put the pictures on a screen like the stereopticon." Tabb noted that even the great Edison had tried that, and had so far failed (an unfair assessment, as Edison really wasn't interested). That did it for Armat. He enrolled in the Bliss School of Electricity in D.C. where, in a stroke of fate, he met another young man with precisely the same goal: Charles Francis Jenkins, a native of Richmond, Indiana, who was in Washington working in the Treasury Department. Jenkins had seen the KINETOSCOPE in a Columbia Phonograph Company parlor on Pennsylvania Avenue and, with the complicity of its manager E.F. Murphy (who, in later



Getting ahead of the story. With the later formation of the Motion Picture Patents Company, separating movies from arcades and freezing out independent producers, a happy Thomas A. Edison — looking downward, in center and once again in control of the industry — is joined by the other insiders. Among them are early arcade projection pioneers George Kleine of the Kleine Optical Company of Chicago (behind Edison), Professor Siegmund Lubin of S. Lubin in Philadelphia (at Edison's left side), the inventive Harry Norton Marvin of Biograph (right center, facing Edison) and J. Stuart Blacton of Vitagraph (second from right). Bueschel Collection.

years, was the lab chief for Universal Pictures), made a duplicate with an improved lighting system which they had out on location by November, thereby leading the way to dozens of other imitators of the Edison machine. Like Armat, Jenkins saw projection as the profitable way to show moving pictures. So the two men teamed up, only to get frustrated as a Jenkins idea called the PHANTOSCOPE didn't work out. By the middle of 1895 a direction proposed by Armat was followed. Armat's basic concept — that each frame should be lighted and projected for a longer time then a brief period of darkness and frame changing — finally provided the solution. The test was made in August, projecting a strip of Edison KINETOSCOPE film and providing the best motion picture to date on a screen, although both men were totally unaware of other work in the field. With success at hand, 3 of the projectors were built that August. Armat and Jenkins displayed their system (rather unsuccessfully; people were afraid of the darkened room) at an exposition at Atlanta in September and split as partners in October after Jenkins tried to claim the machine as his sole invention. In November, through his friend Tabb, Armat contacted Raff and Gammon by wire, offering his projection system to the Kinetoscope Company. Before the year was out an agreement was in the works and the Kinetoscope Company was in the projection business. One problem. What were they going to do about their exclusive agreements with Edison? What followed was both unusual and almost unreal, and would lead to the ultimate break between coin machines and projected movies while the one industry begat the other.[119]

Not wishing to lose their connection with the valuable Edison name, The Kinetoscope Company proposed that the Edison Manufacturing Company could produce the machine under license so that Raff and Gammon would continue to use Edison equipment while everybody prospered. Edison bought the idea, and by March, 1896 the newly named Armat VITASCOPE was in production at Orange, New Jersey. That quirk of business led the press and the public to believe that Edison had invented a motion picture projector (it would be many years before Thomas Armat received due credit) and projected films would soon become an adjunct to many of the Kinetoscope Parlors

across the country. The "Edison" VITASCOPE had its public unveiling at the popular Koster & Bials' Music Hall on 34th Street at Herald Square near Broadway the evening of Thursday, April 23, 1896, at the time the center of New York City's night life (and later the site of Macy's department store), with projection of Edison KINETOSCOPE films through an Edison produced Armat machine onto a large 20-foot screen surrounded by an overpowering gilded golden frame. Thomas Armat was in the projection booth — itself a new idea — along with a newly hired Edison employee named Edwin Stanton Porter (who went on to career as a travelling projectionist, holding shows in tents while he introduced himself as "Thomas A. Edison, Jr.," then later became one of the movie industry's first great feature film producers) with both men nursing every sprocket notch of film through the VITASCOPE. The showing was an enormous success, with top-hatted viewers in the front row ready to break and run when films of a pounding surf were shown. Filmdom was launched, months before the Lumieres arrived from France, months after Edward H. Amet was showing his films to paying customers at the Opera House in Waukegan, Illinois and only a few months after Robert W. Paul of Acres And Paul of London, England, had successfully demonstrated his own indigenous ANIMATOGRAPH projector (that exciting seascape footage at the VITASCOPE showing was, in fact, Paul's) to start the British movie industry.

Acceptance was rapid, at home and abroad. In Los Angeles a fairly recent Kinetoscope Parlor owner named Thomas L. Tally (who would become a multi-millionaire in the twenties as Hollywood's leading movie distributor) opened up his new Phonograph And Vitascope Parlor at 311 S. Spring Street in Los Angeles in August, 1896 while other parlor operators scurried around to once again rebuild their facilities to allow a partitioned seating area for projected films. While true movie history doesn't really begin until after the turn of the century and the beginning of storied feature films, the Nickelodeons and movie theaters of the future had their birth in rows of wooden chairs set up to see pictures while other paying customers in the parlor weighed themselves, listened to a phonograph through ear tubes, peered at peep shows and, where they were available, hit a punching bag, all activated by the dropping of a coin. It was Tally, in 1902, who finally disposed of his coin machines and filled his whole store front location with seats for viewing projected films in his 10¢ "Electric Theatre," swiftly and inexorably separating coin machine arcades from movie theaters. From that point forward they each have their own histories.[120]

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[91] The Coleman Sellers sequence was largely built up by data in the chapter "From Aristotle to Philadelphia, Pa,": Terry Ramsaye, *A Million and One Nights, a history of the motion picture*, Simon and Schuster, Inc., New York, 1926 and from other directory and chronological researches.

[92] Clara E. Patterson, of New York City, *Coin-Operated Stereoscope,* Applied: February 10, 1888; U.S. Patent No. 405,321, June 18, 1889.

[93]James F. Goodridge, of Boston, Massachusetts, *Coin-Operated Picture Exhibitor,* Applied July 16, 1889; U.S. Patent No.431,049, July 1, 1890.

[94] John Ringen, of St. Louis, Missouri, *Coin-Controlled Stereoscope,* Applied: February 12, 1892; U.S. Patent No. 485,567, November 1, 1892.

[95] Milton Oliver Griswold, of Rock Island, Illinois, *Coin-Controlled Picture or Surface Exhibitor,* Applied: May 14, 1891; U.S. Patent No. 472,704, April 12, 1892.

[96] Catalogue, *Latest Nickel in the Slot Machines*, M. O. Griswold & Co., Rock Island, Illinois, Circa 1892. Bueschel Collection.

[97] *Ibid.*

[98] Much of this brief history of the origins of motion picture machines and their inventors came from data in the "Muybridge in Myth and Murder""and "In the House of the Wizard" chapters of Terry Ramsaye's *A Million and One Nights,* Simon and Schuster, Inc. New York, 1926 plus researches in the United States Patents, *U.S. Patents Index,* 1876-1903 and Valerie-Anne Giscard d'Estaing, *The World Almanac Book of Inventions*, Ballantine Books, New York, 1985.

[99] Joseph H. North, *The Early Development of the Motion Picture 1887-1909, A Thesis presented to the faculty of the Graduate School of Cornell University for the Degree of Doctor of Philosophy*, September, 1949, First publication in book form, *Dissertations on Film Series,* The Arno Press Cinema Program, Arno Press, A New York Times Company, New York, 1973.

[100] Ramsaye, *A Million and One Nights.*

[101] *Ibid.*

[102] The quote is taken from Ramsaye, *A Million and One Nights,* with the inventive scenario created from data in this source; Joseph H. North, *The Early Development of The Motion Picture 1887-1909*; and entries in *The National Cyclopaedia of American Biography.*

[103] *Ibid.*

[104] Thomas A. Edison, of Llewellyn Park, New Jersey, *Apparatus for Exhibiting Photographs of Moving Objects*, Applied August 24, 1891; U.S. Patent No. 493,426, March 14, 1893.

[105] The quotes are from Ramsaye, *A Million and One Nights.*

[106] "Mr. Edison Wants To Fly", *Albany Tribune,* November 3, 1983. From Edison National Historic Site, National Park Service, West Orange, New Jersey, provided by Mary B. Bowling, Archivist/Acting Supervisory Museum Curator, December 21, 1988.

[107] Ramsaye, *A Million and One Nights.*

[108] Details of the Lumiere story were taken from Joseph H. North, *The Early Development of the Motion Picture 1887-1909,* Arno Press, New York, 1973, which covers and quotes five original sources on the subject.

[109] Much of this story came from data in Ramsaye, *A Million and One Nights,* as did the Edison quote.

[110] *Ibid.*

[111]George K. Spoors *George Spoor's Memorandum,* Speech given at Waukegan Chamber of Commerce, May 10, 1944. Lake County Museum of History, Lake County, Illinois.

[112] *Ibid.*

[113] Nicolay Nelson, of Waukegan, Illinois, Assignor to Himself and the Chicago Recording Scale Company, of same place, *Kinetographic Camera,* Applied: June 10, 1897; U.S. Patent No. 594,094, November 23, 1897.

[114] Allen Smith, "Waukegan Inventor — Amet was a Movie Pioneer," *The Waukegan News - Sun,* Wednesday, July 15, 1958.

[115] "Waukegan Birthplace of Movies; First Projector Was Produced Here," *The Waukegan Post,* (no date), 1939.

[116] Ramsaye, *A Million and One Nights.*

[117] "An Effort to Prevent Edison from Selling Kinetophones in Foreign Lands," *The New York Times,* June 20, 1895.

[118] Much of this story came from data in Ramsaye, *A Million and One Nights,* although most of the interpretations are by the authors.

[119] *Ibid.* The quotes are from Ramsaye, *A Million and One Nights.*

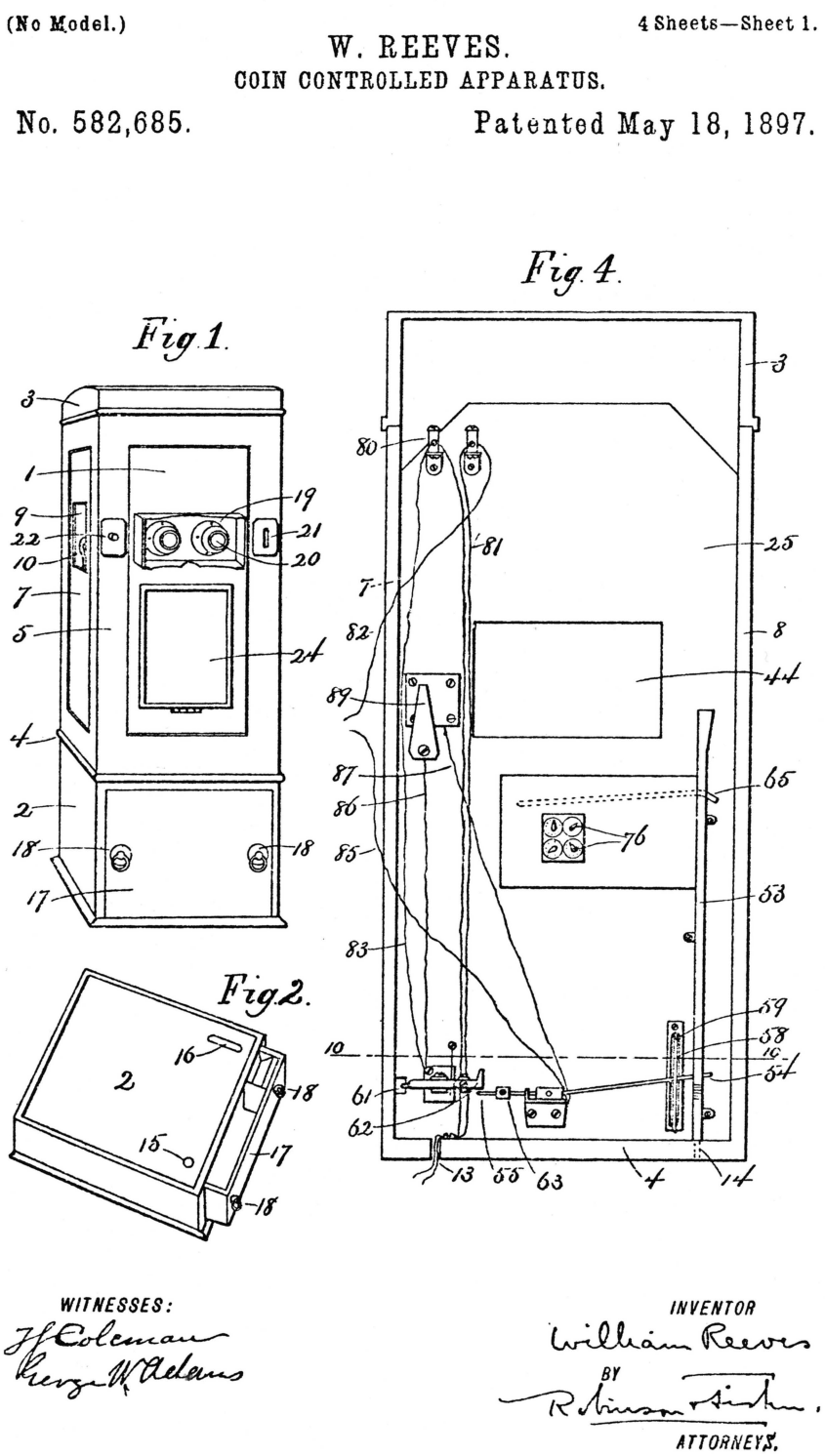
[120] Essentials of this story from Ramsaye, *A Million and One Nights* with E.S. Porter notes and anecdotes from *The National Cyclopaedia of American Biography* and Adolph Zukor, with Dale Kramer, *The Public Is Never Wrong*, G.P. Putnam's Sons, New York, 1953.

THE MUTOSCOPE MAKES ITS MARK

The coming of the KINETOSCOPE created a peep show boom. But unless you signed up with Raff and Gammon you couldn't get the machines. That left the door wide open for other copycat makers and a wide variety of other approaches to pictorial presentations. The year after the KINETOSCOPE made its coin-op appearance, Milton O. Griswold of Rock Island, Illinois, was back with another viewer called THE AUTOSCOPE, utilizing the firm's no longer as significant picture library. A more exciting development was the first truly successful commercialization of the coin operated stereo viewer. The maker was William Reeves of New Haven, Connecticut, working in the largest city in the state which was already a coin machine capital with cigar venders, trade stimulators and gambling machines being produced there for up to a decade by as many makers. Reeves solved the problem of viewing by electrically back lighting transparencies rather than bouncing ambient or artificial light off of reflective art as earlier machines had done. He called his machine the STEREO-COSMORAMA and proceeded to set up national distribution along the lines of the representation established by The Kinetoscope Company, a marketing tactic that would remain as the most enduring mark of the Edison participation in coin machines. Under the name of the Stereo-Cosmorama Company (Note: An early use of the promotional "rama" appendage to an active word so overused in the 1950s), located at 158 Whalley Avenue, Reeves soon had representation in most major cities, including the M. Kollman Company in San Francisco, a Peter Bacigalupi competitor, selling the entire length of the Pacific Coast from California through Oregon and Washington. These machines did as much as anything else to stimulate gold fever once the Klondike Gold Rush was on in 1897, showing stereos of the trek to the gold fields and the mining to eager onlookers in the peep parlors, saloon and steamship dock locations of the Pacific coast. Reeves refined his machine in 1897, and described its workings in its patent: "This invention relates to coin-controlled apparatus for the exhibition of transparencies, the light for which is presented on the opposite side of the view or slide from the eyes of the spectator, the transparencies being mounted on an endless rotary band or series of sections operated by clock mechanism under control of a coin deposited in the usual slot or chute. The invention consists in certain improvements in the mechanism for rotating and adjusting the band, registering the deposit of the coin, making and breaking connection of the electric light used to exhibit the transparencies, and other features... [121] The Machine remained in production and use into the early 1900s, with its name changed to the COSMORAMA and the company name becoming The National Cosmorama Company — with the word "Photographic" inserted at the beginning in later years to qualify its field — while everything remained at the same location.

While these alternate approaches to the peep show carved out their market in niches it would be left up to a completely new idea to sweep the market, and in doing so correspondingly sweep Edison's KINETOSCOPE out of the industry. In a strange quirk of fate the same man that created the KINETOSCOPE would create the new competitor, yet in a replay of history once again he didn't get the credit. When William Kennedy Laurie Dickson so abruptly left Edison's employ in April, 1895 he was in his early thirties, and the most experienced man in motion picture photography and display in the world. Yet he had no job. His disaffection with the Lathams and the Lambda Company Inc. had left him at loose ends. But as is so often the case in forced decisions, it may have been the best thing that ever happened to him. His role at Edison had been diminishing day by day, and his removal from the Lambda situation pulled him out of a losing proposition. Suddenly he was a free agent and, to his advantage, he made a new connection that solidly made him a coin machine man.

In point of fact, Dickson's association with his new partners went back to his days at Edison Laboratories. With his mentor Thomas Edison removing himself from active interest in motion pictures in order to concentrate on power, lighting and mining, Dickson was left to his own devices. And he had


(No Model.) 4 Sheets—Sheet 1.

W. REEVES.

COIN CONTROLLED APPARATUS.

No. 582,685. Patented May 18, 1897.

Fig. 1.

Fig. 4.

Fig. 2.

WITNESSES:

INVENTOR

ATTORNEYS.

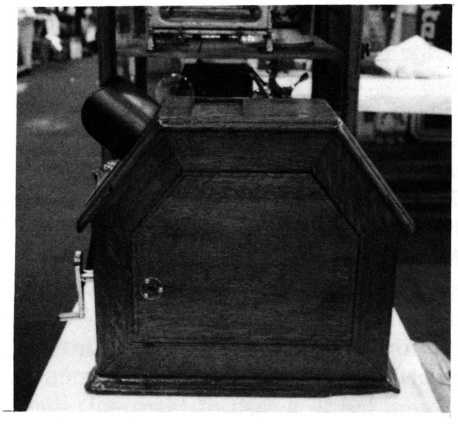
A giant step forward for the peep show, the Reeves Manufacturing Company STEREO-COSMORAMA of February 1897 was the first truly successful coin-operated stereo viewer. The machine was made in New Haven, Connecticut, a major coin machine producing center in the 1890s. Distribution was by the Stereo-Cosmorama Company. U.S. Patent Office.

many. One, which intrigued him a great deal, was the concept of flipping sequential pictures formed into a booklet to create the simulation of motion as each slightly changed illustration came and went. One of the people he showed his idea to was Harry Norton Marvin of Canastota, in upstate New York. Marvin was a familiar figure around the Edison Laboratories as he was working with the Wizard himself on the development of an electrically powered mining drill. After Dickson and Marvin first met in the Edison testing plant in New York City in 1887 they soon formed a friendship that would last for decades, with the two men sharing ideas and experiences. In 1894 Dickson wrote to Harry Marvin at the latter's Marvin Electric Drill Company in Canastota to explain the process of his new action viewer. Both men recognized that Dickson's clever gadget was a different way to display photographic action. Due primarily to Dickson's close association with Edison and the KINETOSCOPE it was decided that any Dickson connection to whatever became of the approach — Marvin gave it the name MUTOSCOPE (meaning changing picture viewer) — should be secreted to avoid any future legal problems or charges of conflict of interest. Edison, everybody knew, would sue at the drop of a hat if he felt his inventions, no matter how peripheral his interest, or his good name were challenged. Marvin fiddled briefly with the idea, and then passed it to his friend Herman Casler, a 27 year old who would become his factory superintendent at Marvin Electric Drill and his chief machine designer. Casler had sharpened his mechanical engineering skills as an electric rock drill designer and draftsman at General Electric Company's Schenectady works where he started in 1893. Casler was also an inventor in his own right and was applying for patents on products as diverse as toys and still camera shutters, and getting them. Before that he had apprenticed to his cousin Charles E. Lipe of Syracuse, New York, for five years, no doubt working on the design details of the coin operated lifting machines that Lipe had developed for the John Lighton Machine Company. This made the young Casler an old hand in a new art, that of practical amusement coin operated machines.[122]

Taking off from where Dickson left off, both Marvin and Casler came up with a series of approaches to display the "Mutoscope" pictures, from a bound wheel of photos turned by a crank to hand held and boxed views that flipped the pictures by wheels and shuttles, bracketing the art by getting patents on all of them. First applying for a patent on November 21, 1894, while he was still a draftsman at General Electric at



The quartet responsible for the invention, development, production and marketing of the MUTOSCOPE, and the four members of the K.M.C.D. Syndicate. Left to right are Harry Norton Marvin, sitting, the Canastota, New York, industrialist who gave the machine its name; William Kennedy Laurie Dickson, standing, who had the idea for MUTOSCOPE motion; Herman Casler, standing, the developmental engineer and inventor who worked for Marvin and got the credit for the machine's creation; and Elias Bernard Koopman, sitting, the financier who put the marketing package together. The photo was taken on Sunday, September 22, 1895, on the lawn at Casler's home in Canastota on the occasion of the filming of the first MUTOSCOPE featurette. K.M.C.D. stood for Koopman, Marvin, Casler and Dickson, the four syndicate members ranked by their importance to the venture. Terry Ramsaye Estate.



By description, the MUTOSCOPE MODEL C "Oak Mutoscope" is a "box-like machine" with "...photographic prints... attached by one end to a wooden spool." Fittings are polished brass. Photo by Bueschel.



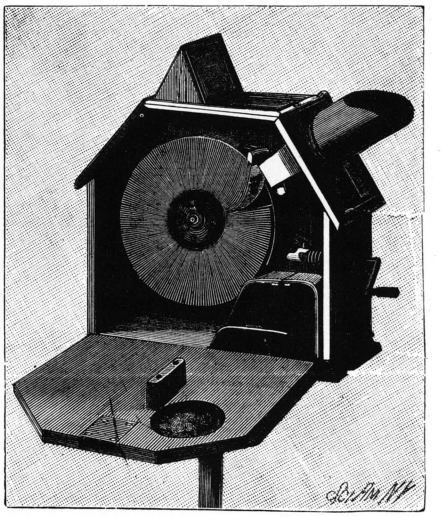
Syracuse, Herman Casler submitted the first of the Mutoscope patents. In a matter of months, Marvin and Casler were soon working together. In October 1895 they formed the American Mutoscope Company in New York City to exploit their new amusement device once they knew the first patent was coming through, with both men applying for a total of three more patent approaches on November 14, 1895, getting patents on all four approaches stretched out from November 5, 1895 to November 15, 1898. Then, to cover their bets, Casler applied for a British patent on his first approach on July 30, 1985 followed by other major European countries.[123] The following February Casler had a camera to take the larger stop action films needed by the MUTOSCOPE — Marvin named it the MUTOGRAPH — and everything was in place.[124] With that, W. K. L. Dickson was clear of any involvement — although he had quietly provided Casler with development and design help on the camera since he had left Edison in April, 1895 — and the MUTOSCOPE system was a design reality.

The MUTOSCOPE differed markedly from the KINETOSCOPE in that it flipped positive photographic images or cards past an ambient light box while the Edison machine ran an endless loop of film between a battery powered light source for short focus projection and viewing off of a miniature white screen. That made the KINETOSCOPE far more complex and costly. Then, to get all of the image possible out of the reflected ambient or non-generated light source, the MUTOSCOPE pictures were made much larger so the viewer got a much better peep for the money. But beyond the enhanced view, the other advantage of the MUTOSCOPE was its simplicity and movability. It would be years before electric models were made, whereas the initial wooden cabinet counter models — often stuck on pipe stands — were easy to pick up and move anywhere as long as there was light. While the picture process was Dickson's, the coin process was pure Casler, already the veteran of a decade of coin machine design. The time had come to cash in, and to do so Harry Marvin and Herman Casler became partners in their newly formed Marvin and Casler Company, formed in Canastota in 1896, both to manufacture the MUTOSCOPE under contract to its operating company, as well as make other coin machines of Casler's design. This union led to production of the MUTOSCOPE Models A through D and later models from 1894



Offshore MUTOSCOPE production by the Mutoscope And Biograph Syndicate, Ltd. of London, England was similar to the American "Oak Mutoscope." Close up shows use of the French Mutoscope and Biograph Company coin chute of the Gaument mechanism on a British machine. Bob Klepner (Australia) Collection.

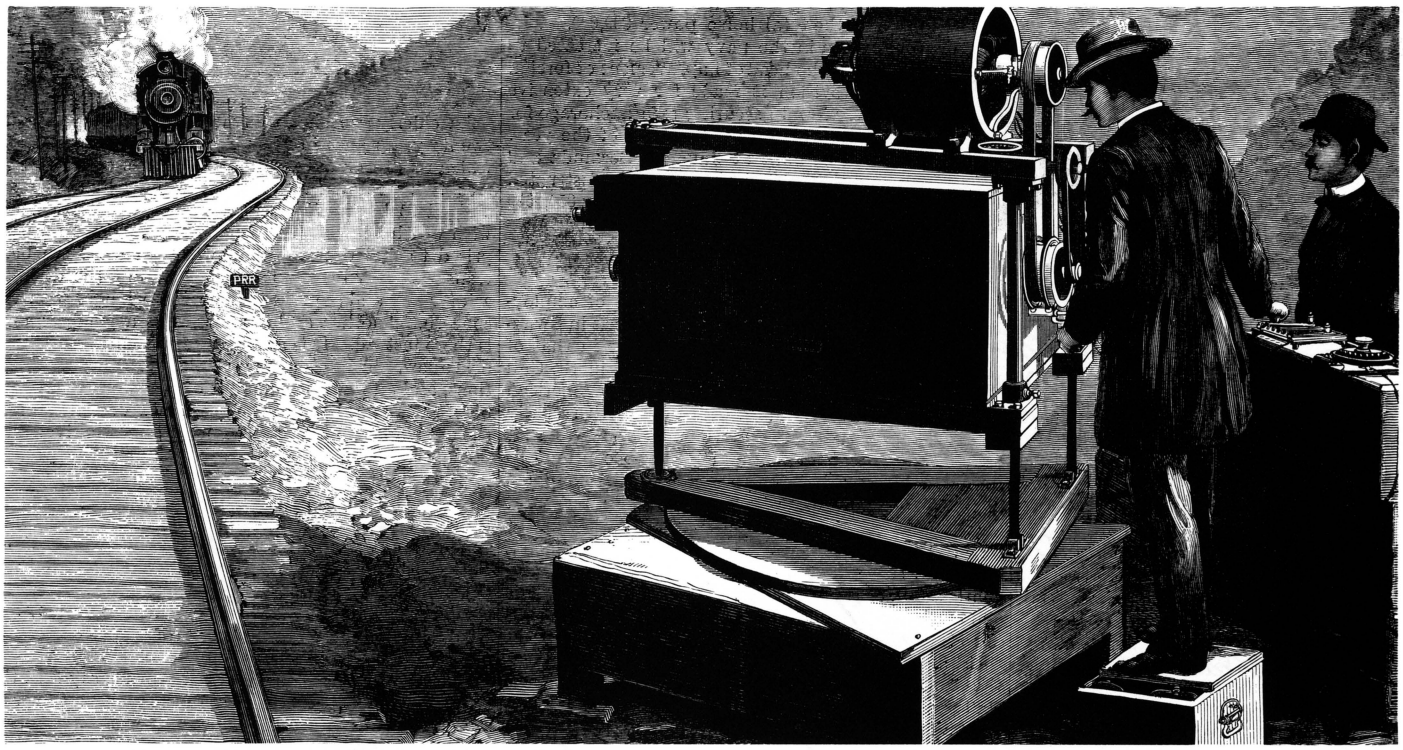




The early MUTOSCOPE MODEL A was in a wooden case and utilized ambient light from the top and side to illuminate the moving image, its speed controlled by a front crank. Scientific American, April 17, 1897.

to 1899 and beyond, the highly popular Casler NAME PLATE MACHINE, first produced in 1901, and an arcade and saloon staple, the ingenious Casler all mechanical PALM READER that gave the player a printed character reading based on the contours of the hand, first introduced in April 1905. By the early 1900s, and into the 1920s, the Marvin and Casler firm was one of the leading suppliers of arcade machines with a direct historical link back to the original JOHN LIGHTON TEST LIFTING MACHINE of 1888. In 1912, with the unexplained disappearance of Harry Marvin, Hermann Casler took over with firm until he sold it in 1923. Casler was also involved in other business in town, including consulting with Remington-Rand Corporation on the photographic preservation of office records, and finally he met his maker in his adopted home town of Canastota on Thursday, July 29, 1939, a month before Germany signed its infamous nonaggression pact with the Soviet Union and less than six weeks before the coming of World War 2. To his dying day, and since, Casler has been credited as the inventor of the MUTOSCOPE, yet it is in large measure Dickson's machine. What Casler did contribute was the BIOGRAPH, a motion picture projection system that rivaled the Armat and Edison systems (which led to a rash of lawsuits!) that was in effect an outgrowth of his MUTOSCOPE experience.

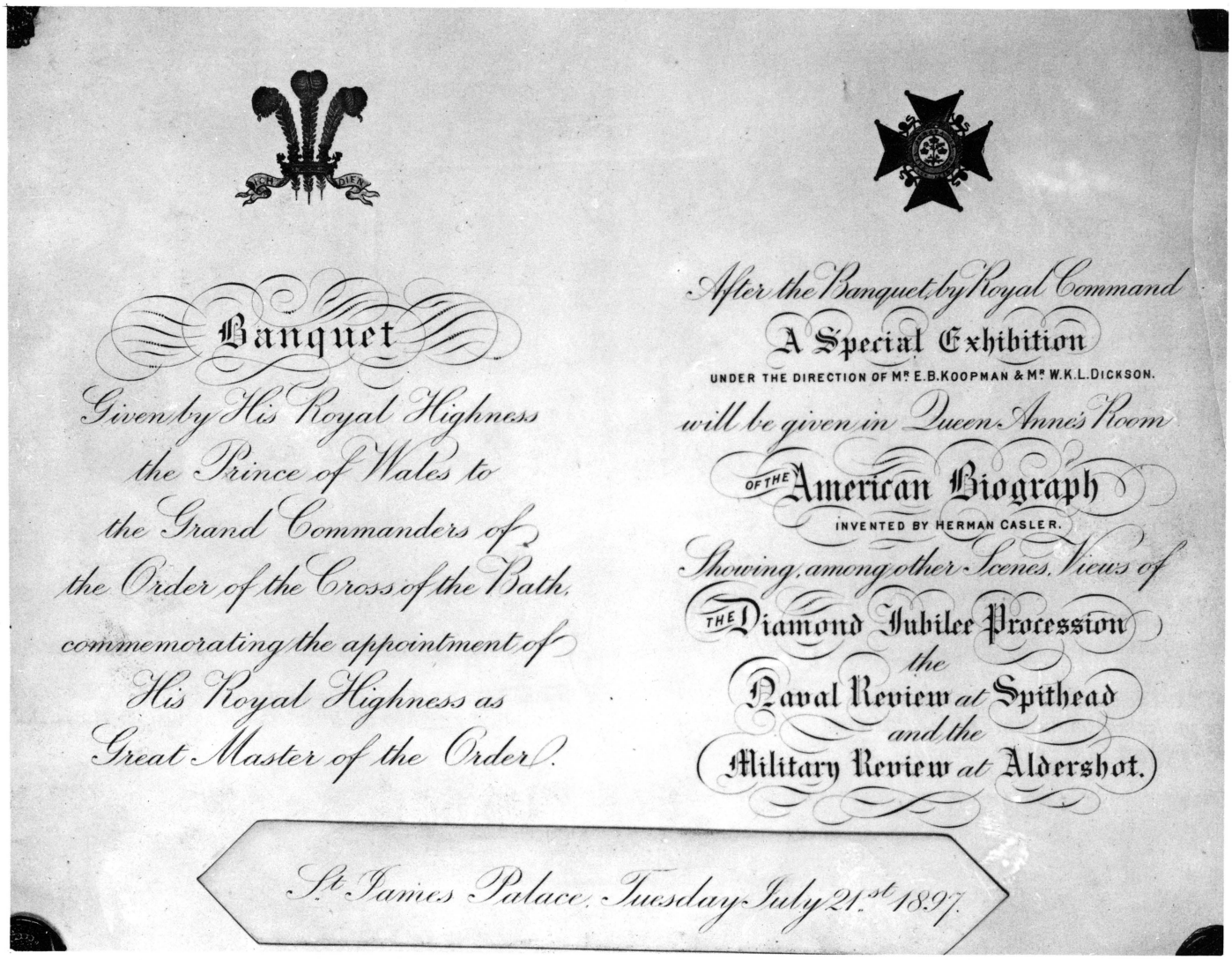
Marvin's contributions also cannot be underrated, for he was the man that quickly grasped the promise of the system, and economically made it happen. Yet, after a distinguished career in invention and manufacturing and four years after MUTOSCOPE production ceased at Marvin and Casler, in the spring of 1912, he never showed up at



W.K.L. Dickson, standing on box, shoots the THE EMPIRE STATE EXPRESS train with Herman Casler's MUTOSCOPE camera for projection on the AMERICAN BIOGRAPH. At its first showing on October, 12, 1896 at Hammerstein's Olympia Music Hall in New York City, people screamed. Scientific American, April 17, 1897.



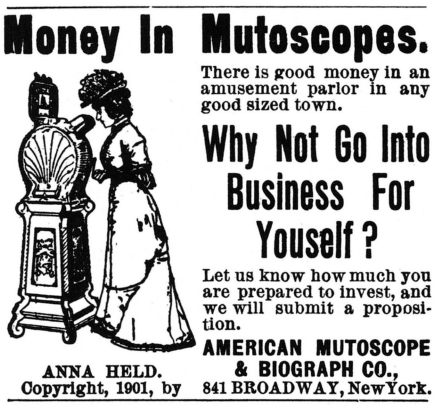
The instant mass popularity of the MUTOSCOPE created a whole industry, with production by the Marvin and Casler Company in Canastota, New York and half a dozen other subcontractors by 1900. This is the film drying and retouching room, circa 1896, wooden MUTOSCOPE MODEL A on pipe stand in foreground. Scientific American, April 17, 1897.



Harry Marvin and Herman Casler were missing from the first British showing of the AMERICAN BIOGRAPH on the event of the appointment of Edward, the Prince of Wales, as the Great Master of the Order of the Cross of the Bath, St. James Palace, Tuesday, July 21, 1897. On hand were money-man E. B. Koopman, who would soon set up Mutoscope And Biograph companies in England, France, The Netherlands and Germany, and W.K.L. Dickson, who had returned to his roots. Bueschel Collection.

the shop again, nor was he ever found. It was said he went down with the TITANIC the night of Monday, April 15, 1912, and local people remembered the fact. Except his name was never identified on any of the ships passenger lists. His disappearance remains a mystery.[125]

While the patenting and production of the MUTOSCOPE was left to Harry Marvin and Hermann Casler, the funding and placement of the machines was a different story entirely. It would take a lot of money to get the project started and put it over, and Harry Norton Marvin, a promoter at heart, knew that full well. Then there was Dickson's contribution to consider. Harry needed an angel. He found it — or the beginnings of the financial connections — in a chance meeting with his friend Elias Bernard — everyone called him E.B. — Koopman, a New York Boulevardier, who had a novelty manufacturing and marketing firm called the Magic Introduction Company, located at 841 Broadway. Koopman's recommendation was to come up with a syndicate that provided a four way split after a return on investor's money. That gave the money men something to invest in while it provided for the participants. Thus, the K. M. C. D. (Koopman, Marvin, Casler and Dickson) Syndicate was created, and on September 22, 1895 all four men met for the first time at Casler's ample Queen Ann style home in Canastota on the occasion of shooting their first MUTOSCOPE commercial film, a boxing match. An attempt had been made to utilize Edison films — many originally shot by Dickson — to make prints for the MUTOSCOPE. But Edison vehemently rejected the idea, once again leaving Dickson to his own devices. Every time that happened, Dickson created something new. In this case, it was the standardization of MUTOSCOPE pictures at 2–3/4" x 2", shot at 30 images a second rather than Edison's jumpy 16. That alone improved the MUTOSCOPE picture to the point that by the end of 1895, with the initial machines out on lease, Edison dropped his KINETOSCOPE price from $200 to $70, telling The Kinetoscope Company to sell at $100. But the picture was in the peep, so to speak. By the end of 1896, the KINETOSCOPE was old hat and the MUTO-



Later just known as the "Mutoscope Lady," the diminutive French comedienne Anna Held, the Toast of Broadway, posed for MUTOSCOPE promotion in 1901. In the beginning, her name was included in American Mutoscope & Biograph Company advertising and later dropped. New York Clipper, February 8, 1902.

SCOPE was on the rise, to endure to the present day if only in nostalgia arcades in major theme parks. By the early 1900s Marvin and Casler had a booming manufacturing business in MUTOSCOPE machines, Dickson had gone back to England and later France to live in comfort and E. B. Koopman had established and was managing the British MUTOSCOPE and Biograph Company at 18 and 19 Great Windmill Street at Piccadilly Circus in London, soon to set up indigenous MUTOSCOPE firms in Amsterdam, Paris, Berlin and elsewhere. First starting out largely with his own money, as production and franchise demands increased Koopman turned the money matters over to other financiers including Channing F. Meek of the Union Pacific Railroad and American Ball Nozzle Company and LeRoy W. Baldwin of the Empire Trust Company, a financial professional who had come up through the coin machine ranks as the young man picked by Percival Everitt back in 1885 to run his American scale operation, with Baldwin later forming the National Weighing Machine Company franchise operation which he sold out to become an investment banker.[126] They all shared in the spoils of what would become the most successful arcade machine ever made in terms of endurance and cash flow, with pennies, nickels, dimes and quarters filling MUTOSCOPE cash boxes for almost a hundred years.



The drum-shaped American Auto-Machine AUTO-MACHINE of 1897 gave a barroom peep show presentation of 15 backlighted glass showgirl slides. Clockwise from top left: Yolanda Wallace in typical showgirl tights; Grace Pierpont gets racy with an exposed leg in striped stockings; cigarette puffing showgirl suggests "You've come a long way, Baby;" and Mme. Fearnlie exposes about as good as it gets. Surprisingly, the Naughty Nineties were prudish. Frank Zygmunt/Robert Ferguson.

In its classic format, "The Mutoscope was a box-like machine, about the size of a cabinet Victrola, with a peep-hole in front modeled on the stereoscope, with a crank handle in the side. If you wanted to see the picture you dropped a cent, or a nickel, as the case might be, into the slot, glued your eyes to the peep-hole, and turned the crank. The pictures were enlarged photographic prints made from a moving picture film separated and attached by one end to a wooden spool. The loose ends of the picture flipped over a sort of lug so that each picture was exposed to the eye for a fraction of a second, and the effect of motion was given pretty much as in the case of a film running past the projection machine shutter.

"Each Mutoscope was surmounted

Special Notice. This circular is intended as a full and complete answer to your letter asking for particulars of our new business.

How to Make a Large Income.

$150. to $800. Weekly — Clear Profit.

Positively no risk whatever. You handle your own money AND HAVE BANK SECURITY FOR EVERY DOLLAR.

Experience entirely unnecessary. No canvassing or Peddling.

THIRTY DAYS FREE TRIAL. Business also suitable for Ladies.

Some men cannot sell gold dollars for twenty-five cents each. Such men (or women) *will fail at anything*, no matter what it is. We do not wish to waste our time with triflers of this kind. *We address ourselves to the workers.* If you really desire a *very remunerative business* and are willing to work and use the same "hustle" and energy that you would to succeed in any other vocation, then *read this circular carefully*, for it describes an *absolutely sure and safe business* for men (or women) who have a little capital and moderate brains and energy.

No GREAT WEALTH is required; only a few hundreds or thousands of dollars; no superhuman energy or toil, or extraordinary brain capacity is demanded. It is a business in which good, honest, fair working plodders *can do better than in any other business on earth;* and that, too, *with really no risk;* while brilliant individuals can be sure of taking extraordinary receipts and enormous profits.

NOW TO EXPLAIN.

We are manufacturing and putting on the market "NICKEL IN THE SLOT" and other automatic machines, mechanical nov-

Address all communications and have all money orders payable to
The American Auto-Machine Co., 131 Liberty St., New York City.

The sales booklet offered by The American Auto-Machine Company of New York City in ads in The National Police Gazette and The Billboard circa 1899 and 1900 described the firm's peep show line, including the ARTOSCOPE, METAL CASED ARTOSCOPE, AUTO-RAMA and PHOTO-RAMA. A major MUTOSCOPE competitor at first, the superiority of the advanced cast iron models of Casler's machines soon put American Auto-Machine out of business. Bueschel Collection.

by a sign supposed to be descriptive of the picture behind the peep-hole. The titles were made a suggestive as possible and if anything presumed to be sexually exciting could be found in one of the pictures in the reel, it was enlarged and pasted on the sign. The suggestiveness in the signs was the only immoral feature in the picture. The height of wickedness in the picture was reached when the girls in them showed about half as much of their stockings as is customary in the prevalent street display today."[127]

There is a postscript to the MUTOSCOPE story, and it relates to the development of the modern motion picture industry , itself a business right on the edge of technological change that will finally take it away from its mechanically sprocketed film and light projected origins. Just as the creation of Edison's KINETOSCOPE inevitably led to projected films, the development of the MUTOSCOPE led in the same direction. But there was a difference. Where the Armat VITASCOPE and other Edison-derived approaches supplanted the KINETOSCOPE coin machine, making it disappear into the mists of time, the American Mutoscope Company added projection to its offerings while it maintained production and leasing of both forms of amusement, ultimately changing its company name to reflect its expanded corporate mission. While Dickson may have started the firm down the track of projection, it was Casler that carried it there, putting his personal imprint one every improvement and change of direction. Although his name is almost lost to motion picture history, without him there would have been no modern movies or, for that matter, feature film videotapes.

It was natural that the K.M.C.D. Syndicate would add film projection to its inventory of exploitable ideas, for they had W.K.L. Dickson in tow, himself eager to avenge his treatment at Edison Laboratories by the most effective means at his disposal; by beating them. So projection became a K.M.C.D. project with Dickson working behind the scenes with Casler. Rumors of this alliance were enough to shake the industry and may have been a contributing factor to Edison's acceptance of the Armat VITASCOPE for production and display under his name. Meanwhile Casler, himself highly knowledgeable in the field of film, shutters and mechanical systems — probably more so than Dickson — was taken direction from Dickson while he added his own intelligence. The result was an entirely different approach to film projection based on staying away from anything that remotely resembled Edison's or Armat's work — Dickson's knowledge in the field made that possible — while solving the many problems of showing films on a screen across a room. The new projector was completed and running by the summer of 1896, after the introduction of the Edison-made VITASCOPE and just as the French Lumiere brothers had brought their CINEMATOGRAPH to American shores. Suddenly it was a crowded field. But the K.M.C.D. Syndicate had something the others didn't: good financing, with enough money to let Dickson and Casler aggressively pursue their ideas. Casler named the projector

the AMERICAN BIOGRAPH, refining its mechanical drives, while Dickson went out and took pictures, including head on shots of THE EMPIRE STATE EXPRESS coming your way, the New York Central's crack train between New York City and upstate Buffalo. The premier showing was at Hammerstein's Olympia Music Hall in New York City — it later became a movie palace called Loew's New York — the night of Wednesday, October 12, 1896, less than 6 months after the Edison VITASCOPE introduction. The reviews bore out the promise of the system; "Several machines for the throwing of moving pictures have been shown here, but the new BIOGRAPH, for all its horrible name, is the best of all of them. The audience want fairly frantic over pictures thrown on a screen...notably one of the Empire State Express rounding a curve, which was one of the best if not the very best moving picture that has yet been exhibited here."[128] If audiences were ill at ease at the surf breaking along the shore in the VITASCOPE film the previous April at the directly competitive Koster & Bials Music Hall, they were screaming and yelling as THE EMPIRE STATE EXPRESS bore down on them as the house orchestra stepped up the volume and the beat. An outstanding success, the AMERICAN BIOGRAPH led the firm to change its name to the American Mutoscope and Biograph Company in 1899 and, once the MUTOSCOPE population had saturated the country it not the world and went out of production in 1908, became merely the Biograph Company, the leading equipment and film producer in the country. Among its stars, both in production and performing, were D. W. Griffith, Michael (called "Mack") Sennett, Wallace Beery, Charlie Chaplin and Gloria Swanson from Essanay Studios in Chicago; Mable Normand, Ben Turpin, "Fatty" Arbuckle, Charlie Chase, Buster Keaton, Harold Lloyd, Bebe Daniels, "Little Mary" Pickford and many others that later established the name and fame of Hollywood. It wasn't until Edison, Armat and Biograph buried their legal hatchets some years later that movie equipment and production techniques were standardized and motion pictures took their place as more than an amusement to become a serious art form and major industry.



An early effort all but lost to movie history was the ANIMATOGRAPH filming of a dramatization of Hattie Nevada's song "The Letter Edged in Black" by the Kansas City Talking Machine Company in the summer of 1898. Bueschel Collection.

While the AMERICAN BIOGRAPH and its improved projection showman's equipment went one way, the MUTOSCOPE went another through a successive line of machine development, from the "Oak Mutoscope" wooden boxes utilizing outside light to the sophisticated electrified cast iron and white metal "Iron," "Clamshell" and "Iron Horse" machines of the late 1890s and early 1900s. The show business connections of the American Mutoscope and Biograph Company accrued to the promotional advantage of the machine, with the diminutive and lovely French comedienne and Broadway favorite Anna Held being used in MUTOSCOPE advertising in 1902 and for some time thereafter, herself a star in at least three AMERICAN BIOGRAPH projection films.[129] Her amply endowed and elegant figure graced MUTOSCOPE literature unnamed for years to become generically known as the "Mutoscope Lady." For all of their concentration on projection films, the cash cow of the firm was still the peep show. "The larger part of the income of the Biograph Company came from the leasing of MUTOSCOPES to conces-

THE PROFESSION.

HATTIE NEVADA

APPRECIATES THE KINDNESS OF THE THEATRICAL PROFESSION IN MAKING SUCH GENERAL USE OF



"THE LETTER EDGED IN BLACK." The Pathetic Song.
"MY FATHER WAS A SAILOR ON THE MAINE." The Popular War Song.
"ON THE OLD MISSOURI SHORE." The Ballad Hit of the Century.
"WHILE THE LEAVES CAME DRIFTING DOWN." The Great Waltz Song.
"I'M JUST AN OLD VAGABOND." The Story of a Mother's Love.
"I'LL COME BACK WHEN THE HAWTHORNE BLOOMS AGAIN." The Touching Love Song.
"JUST THE PICTURE OF A GIRL I USED TO KNOW." A Sentimental Ballad.
"SHE'LL NEVER LIVE TO LOVE ANOTHER COON." "Hot Rag-Time Coon Song, by Claude Melnotte.
"SUMMER TIME IN DIXIE." A Negro Melody.

And extends to them her best wishes and thanks individually. Will be pleased to send Professional Copies and Orchestrations on application. KANSAS CITY TALKING MACHINE CO., Publishers, Kansas City, Mo.

THE PROFESSION.

Hattie Nevada, actually Mrs. Frank H. Woodbury, wife of the founder of the Kansas City Talking Machine Company, was a popular maudlin song writer of the Gay Nineties. Silent dramatizations of her songs were shown in the firm's nickel PEEPOSCOPE peep shows, introduced in 1899. The New York Clipper, Oct. 21. 1899.

sionaires in amusement parks, and were known as Penny Arcades, the largest and most prosperous of the latter being located on the south side of Union Square, just west of Broadway, in a large store room which formerly had been the home of the Kandy Kitchen, then largest of moderate priced restaurants in New York. One of the partners in this arcade was Mr. Mark, who subsequently became quite prominent in the motion picture business and built the Strand Theatre, on Broadway near 47th Street."[130] The pressures of competitive equipment, sold directly to operators as well as the location, ultimately ended the golden days of leasing, with a mad scramble taking place in the decade before World War 1 in which the leases collapsed and the machines were called back to be refurbished and sold back to the operators. Only moderately successful in this venture, the parent firm was left with an unused inventory of equipment while the buying operators spread the usage and fame of the MUTOSCOPE far beyond its original range, its popularity remaining undiminished for years. A generation later, well into the 1920s, "Only a half hour's ride from the humming studios of Hollywood and Culver City, where the movies march on to their appointed future with a great blare of publicity, there is a place where time has stopped and where one may see the film industry in its swaddling clothes, naively offering to the passerby 'Pictures that Move!' for a penny. It is in the penny arcades of Main Street, Los Angeles, where Jim Jefferies is still heavyweight champion of the world and where, on the picture postcards of a bygone area, Gloria Swanson still wears the bathing suit of her beach comedy days. Here, in machines called Mutoscopes, is the great Jefferies-Sharkey fight of November, 1899. Filmed by the old Biograph Company in New York, it still feeds the gaze of the ring fan willing to put a penny in the slot and turn the crank. Here Jack Dempsey is yet an unknown; of his victory over Willard no hint has penetrated this biding place of the past.

"And here, if one has a good memory for faces seen on the nickelodeon screen almost a score of years ago, one may recognize other features still familiar, and perhaps even famous in filmdom. In his early association with Biograph, the man who later directed *The Birth of a Nation* earned a modest living directing these quaint Mutoscope pictures which one sees by peering into a hollow contraption of metal. If one is not afraid of being seen in these penny arcades, and one searches long enough, it is even possible to find somewhere the Mutoscope in which Mark Griffith acted. And after a few hours spent among the Mutoscopes of the penny arcades, the men who, like Griffith, took these crude and customarily scandalous one-minute comedy affairs and out of them, step by step, lifted motion pictures to their present plane."[131] One still can.

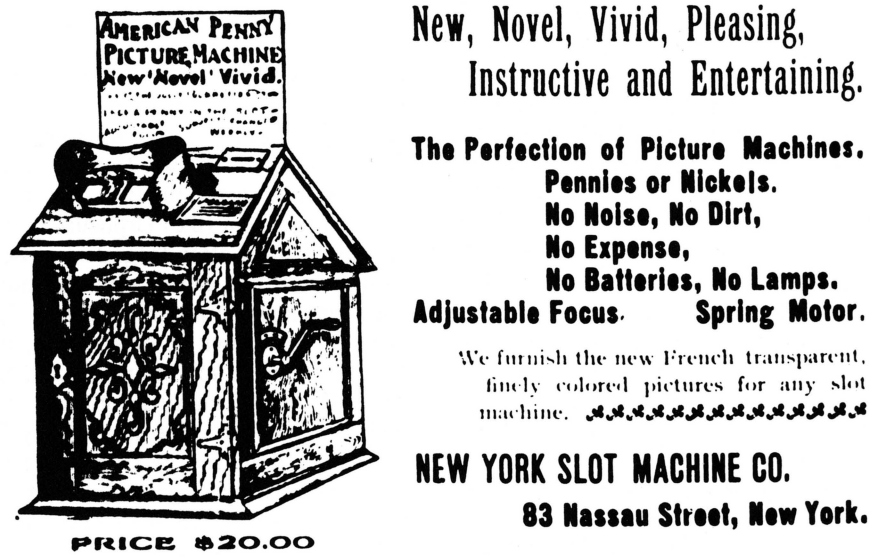
The arrival of the MUTOSCOPE dramatically changed the public's perception of coin machines, taking them out of the bars and back rooms of railroad and steamship stations, making them a viable and profitable business endeavor to run in amusement parks and dedicated arcades. This new location success also bred peep show competition — a lot of it — at home and abroad. The newcomers didn't see themselves as long term business propositions — often they were rip offs to begin with — so they ignored the idea of leasing and the establishment of large film libraries. They sold direct, they changed the pattern and, in the process, introduced rapid obsolescence. The boom years of coin machines were about to begin.

The pick up of peep shows happened in England as fast as it occurred in the United States. In Birmingham, England, the firm of Canova and Thompson — with Vincent Canova already an established exhibition machine maker — came out with their highly successful CANOVASCOPE in 1898, gaining major placements with the moving picture device. The British Mutoscope and Biograph Company had its own evolution, ultimately selling out to the Interchangeable Automatic Machine Company of Islington, the firm becoming the Interchangeable Automatic Machine and Cinematograph (add a "y" and you have cinematography!) Company with its own CINEMATOGRAPH projector in 1900 and,

starting in 1903, the British franchise for the MUTOSCOPE, producing the machines for local and export usage.

But it was in the United States that replication ran rampant. The major player was the American Auto-Machine Company located in New York City, a firm more dedicated to sales to the rapidly expanding saloon market than any other. And for that their stock in trade was showgirl pictures. Pulchritude and photography were made for each other, and to bring this comely combination to "The Boys" American Auto-Machine created a series of small bartop nickel viewers. Their first model, the AUTO-MACHINE of 1897, utilized the system developed by William Reeves of New Haven, Connecticut. 15 glass slides mounted in a carousel were advanced by a clockwork mechanism while a battery provided the power to backlight each one while it was positioned in the viewer. Later models strengthened the coin system and added stereo views. They became major saloon accruements and the means that put them there was advertising. *The National Police Gazette* had long been used to sell the physical test and early gambling slot machines to saloons and barber shops since the late 1880s, with sporadic ads promoting the new coin machine products as they quickly came and went. The American Auto-Machine Company changed that by advertising in the *Gazette*, and staying there. Between April 1899, starting with their ARTOSCOPE, until May 1900 and the AUTO-RAMA, the firm promoted its line of peep shows as a weekly advertiser in the journal. The early ads called the ARTOSCOPE the "Greatest transparent living picture nickeled slot machine with series of acts, etc." and announced "special prices for the next 60 days, $22 and $25." The initial ads also noted that the firm would be moving from its small quarters at 72 Fulton Street to an expanded facility at 131 Liberty Street.[132] The stereo-viewing AUTO-RAMA, in both musical and plain models, joined the line in late May 1899, quickly followed by its PHOTO-RAMA version. By the summer of 1899, the bill poster's and amusement hustlers weekly paper *The Billboard* was added to the media list and pictures were being used in the ads with the copy next to the AUTO-RAMA line engraving saying "It will pay your rent. Our automatic musical slot picture machines Make Large Incomes for saloons, hotels, pavilions, drug stores, parks, gardens, etc. Send 2 stamps for 32 p. illustrated catalogue."[133] It was in the printed piece that the selling really got competitive, with American Auto-Matic Machine relating their machines to already successful equipment. "We are manufacturing and putting on the market 'NICKEL IN THE SLOT' and other automatic machines, mechanical novelties, mail order specialties, etc. etc. Since the first introduction of automatic machines, their success has been simply phenomenal. The weighing machines in the United States, the Edison PHONOGRAPH and GRAPHOPHONE, KINETOSCOPE, MUTOSCOPE, etc. have all paid fabulous amounts and are now paying better than ever. The machines we have put out have earned for their fortunate owners from five to fifty dollars per week clear profit within a week or ten days of purchase. The AUTO-RAMA is the only absolutely perfect automatic moving art or picture gallery ever manufactured. It certainly completely surpasses all inventions of a similar nature made for the amusement of the public. It is provided with a push button; by pressing on this button it will light up electrically and show one exquisite and beautifully illuminated picture free. This excites great admiration on and surprise on the part of the spectator, and it is almost certain that they will drop a nickel in the slot to witness the balance of the fascinating subjects, for twelve marvelous views are shown. Please note that the KINETOSCOPE picture machines only show one picture."[134]

American Auto-Machine, among others, put the heat on Edison and American Mutoscope by selling their machines direct, thereby putting the evergreen leasing deals of their larger competitors in jeopardy. American Auto-Machine also promoted an activity that was even more destructive to leasing, that of championing the independent operator, a completely new job function. Their literature proposed that "Any bright person can make from six to thirty dollars a week with one machine, price $50 to $100. Arrangements can be made to put them in railroad stations, hotels, saloons, fairs, ferry houses, drug stores, church festivals, picnics at a rental of 25 to 33-1/2 per cent of the takings (paid for the location). Each machine in any good location should take in from $3 to $7 per day or more. A man can double his investment every few weeks. The best way to make a large, steady increasing weekly income is to buy twenty to forty machines, go to any town of five to fifty thousand inhabitants, rent a store, place your machines in it and start an AUTORAMA Parlor (name copyrighted). Put up a few illuminated picture



The July 1899 AMERICAN PENNY ARCADE PICTURE of the New York Slot Machine Company was one of dozens of peep show approaches in the market at the turn of the century. The next few years would shake out most of the eastern copycat firms. The Billboard, July 1, 1899.

posters in the window, light it up brightly at night, and you cannot fail to do an enormous business. The admission is free, which always draws a crowd" To outfit such a parlor the machines listed at $50 for a metal cased ARTOSCOPE without music (the same machine that was lowballed at $25 in the April 1899 advertisement), $45 for the same machine in an oak cabinet (the $22 machine in the ad), $100 for the musical PHOTO-RAMA version and $75 for an AUTO-RAMA, although in actual practice the machines cost less, typically $35 for the wooden ARTOSCOPE without a stand.[135]

The opening up of the peep show market had another effect. It began to move the coin machine industry westward across the country as the east lost its franchise on all forms of manufacturing. New industrial centers were being created in Cincinnati, Detroit, Chicago and even farther west through Missouri and all the way to California, although coin machines mould finally settle in Detroit and Chicago, the latter ultimately becoming known as "The Coin Machine Capital of the World." But that was yet to come. In their first westward surge the new mechanical wonders would seek out a few cities and dozens of towns, with the wide open railroad cow town of Kansas City seemingly straddling both jurisdictions. A rough and tumble western metropolis, the second city in Missouri after St. Louis, "KC" had a population of well over 100,000 up from a mere 3,500 in 1865. Its boom town aspects mixed country and city and, increasingly, provided a ready market for canned entertainment. Little wonder that a modest gambling goods and coin machine industry settled there. Among this august group was an entrepreneur named Frank H. Woodbury who, in 1897, formed the Kansas City Talking Machine Company at 425 Delaware Street in town. In a reversal of the procedure followed in the east, Woodbury started with movies first, not as a show but as a backdrop for a live act in dance halls or on opera house stages. "Motion pictures, believed to be the first ever made in Kansas City, were...filmed on the Woodbury's front lawn. A new-fangled contraption called an ANIMATOGRAPH was strapped to a dry goods box on a dray wagon and the late George W. Curtiss, a photographer, was filming a dramatization of a famous sentimental song of the gay nineties, 'The Letter Edged in Black.' Pictures of the dramatization were being made on the Woodbury lawn because Mrs. Woodbury had written the words and music herself under the name of Hattie Nevada. A popular singing evangelist of that period, B. Frank Butts, was the leading actor in the picture. Mr. Butts planned to go on (the) Orpheum circuit singing 'The Letter Edged in Black' from behind the scenes while his audience watched the motion picture. The scenery fell down several times, but finally, amid much shouting and the suggestions of many neighbors, the melodrama began. The *Star* of July 23, 1898 says that George Olmi sang the song over and over again in order to let the actors know when to make their motions. Mrs. Woodbury believes the film...was used on vaudeville circuits, with a singer behind the scenes supplying the words and music."[136] A year later, in 1899, Woodbury brought out his own coin-operated machine, a peep show that looked almost identical to the oak cabinet ARTOSCOPE which he called the PEEPOSCOPE. Over the years the machine was refined and improved until it disappeared just before World War 1, although the Kansas City Talking Machine Company remained in business as a juke box operator at the same address until 1938, managed by Woodbury's son.

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[121] William Reeves, of New Haven, Connecticut, *Coin-Controlled Apparatus,* Applied: February 8, 1897; U.S. Patent No. 582,685, May 18, 1897.

[122] Sequence built up from data in Ramsaye, *A Million and One Nights,* the Herman Casler entry in *The National Cyclopaedia of American Biography* and researches in the *U.S. Patent Index* 1876-1903, with the connection to Charles E. Lipe made by author Bueschel.

[123] Herman Casler, of Syracuse, New York, *Mutoscope,* Applied: November 21, 1894; U.S. Patent No. 549,309, November 5, 1895.

Herman Casler, of Canastota, New York, Assignor to the American Mutoscope Company of New York, N.Y., *Mutoscope,* Applied: November 14, 1895; U.S. Patent No. 614,367, November 15, 1898.

Harry Norton Marvin, of Canastota, New York, Assignor to the American Mutoscope Company, of New York, N.Y., *Mutoscope,* Applied: November 14, 1895; U.S. Patent No. 584,228, June 8, 1897.

Harry Norton Marvin, of Canastota, New York, Assignor to the American Mutoscope Company , of New York, N.Y., *Mutoscope,* Applied: November 14, 1895; U.S. Patent No. 584,331, June 8, 1897.

British Patent No. 14,439, A.D. 1895. Date of Application, 30th July, 1895 — Accepted, 21 Sept. 1895. *Devices for Showing the Changing Postions of a Body or Bodies in Action,* Herman Casler, of 208 Geddes Street, in the City of Syracuse, State of New York, U.S.A., Inventor.

[124] Herman Casler, Of Canastota, New York, Assignor to the American Mutoscope Company, of New York, N.Y., *Kinetographic Camera,* Applied: February 26, 1896; U.S. Patent No. 629,063, July 18, 1899.

[125] Data from Herman Casler entry, *The National Cyclopaedia of American Biography,* and W.R.Cook, *Analysis of Marvin and Casler Company Collection,* Local History and Genealogy Department, Onondaga County Public Library, December 1974.

[126] Much of the background is from Ramsaye, *A Million and One Nights* plus researches by author Dick Bueschel, including W. R. Cook, *Analysis of Marvin and Casler Company Collection,* Onondaga County Public Library; Dean Mathey, *Fifty Years of Wall Street with Ancedotiana,* Princeton, NJ, 1966; and "First Slot Machines Installed at St. Johnsbury, Vt. by English Inventor", *The Automatic Age,* July 1926. The connection to LeRoy W. Baldwin made by author Bueschel.

[127] Charles Austin Bates, "Sketches A Bit of Mutoscope History,""taken from "First Person Singular," appearing in *Advertising and Selling*, reprinted in *The Automatic Age,* March 1930.

[128] "A Moving Picture of McKinley. Enthusiasm at Olympia — Attractions at the various Other Music Halls," *New York Tribune,* Thursday, October 13, 1896.

[129] Howard Lamarr Walls, *Motion Pictures 1894-1912,* Claimant Index, American Mutoscope and Biograph Company, Copyright office, The Library of Congress, Washington, DC, 1953.

[130] Charles Austin Bates, "Sketches A Bit of Mutoscope History," *The Automatic Age,* March 1930.

[131] "History of Movie in Penny Arcade," *The Automatic Age,* May 1926.

[132] Advertisement, The American Auto-Machine Co., *The National Police Gazette,* April 8, 1890.

[133] Advertisement, The American Auto-Machine Co., *The Billboard,* July 1, 1891.

[134] *How to Make a Large Income,* illustrated booklet, The American Auto-Machine Co., 131 Liberty St., New York City. Bueschel collection.

[135] *Ibid.* Actual prices pencilled in on back of booklet.

[136] "Movies 40 Years Ago. Kansas Citizens Recall First Such Photography Here," *Kansas City Times,* July 23, 1938. Also researches by Marjorie Kinney, Missouri Valley Room, Kansas City Public Library, Kansas City, Missouri.

ROOVERS AND ROSENFIELD

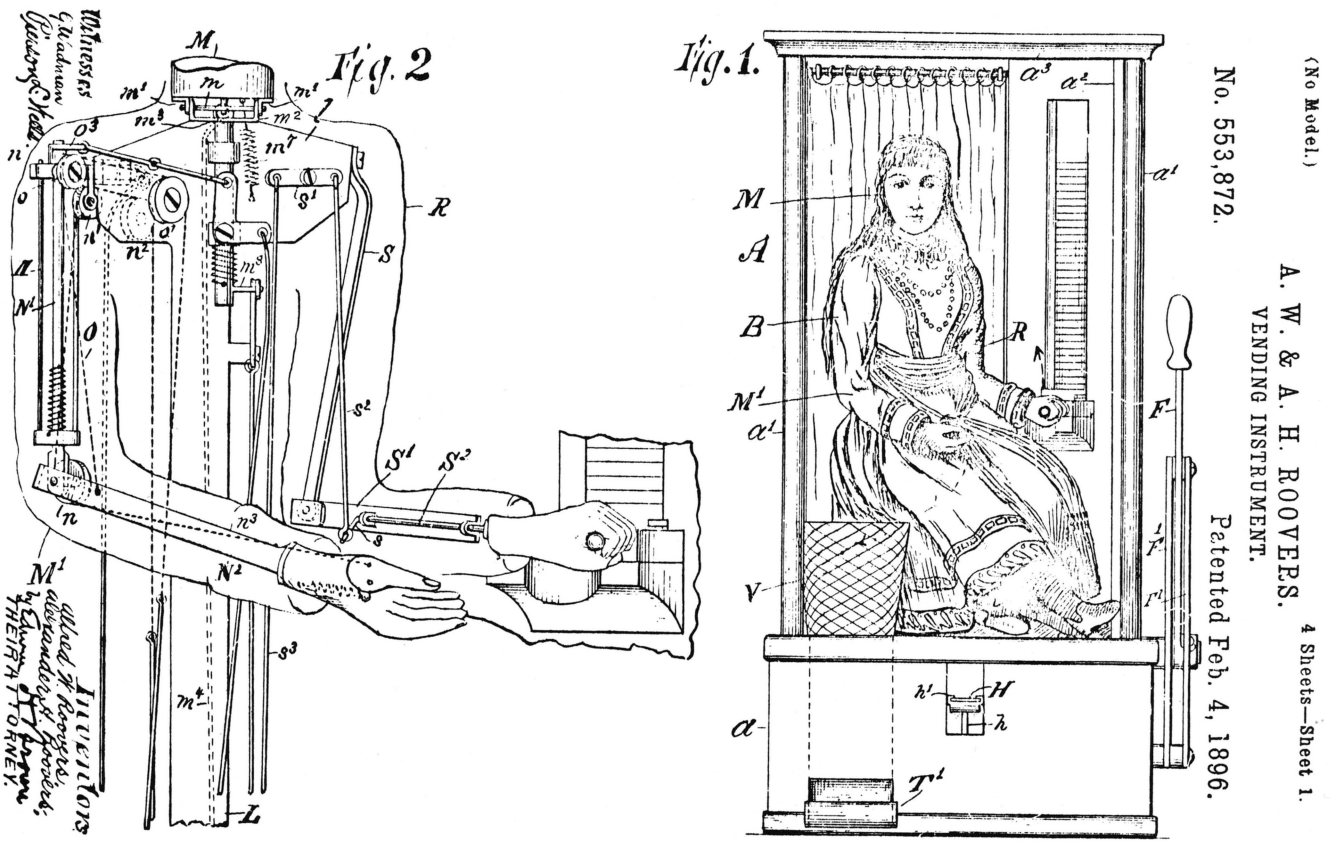
The coin machine industry was growing up in spite of itself. What had started as a novelty business — making devices that were at once novel (or different), amusing, new and, as was often the case, short lived (although the description appellation "novelty" survived in company names for many years and, in the case of the largest producer in the industry, until the coming of World War 2) — was becoming a stable and dependable industry. The growth of the independent operator and the arrival of the dedicated parlors — the legacy of the KINETOSCOPE — finally allowed the machine producers to do some planning. Selling machines was slowly moving out of the entrepreneurial luck and pluck marketing that had characterized the early starters, turning instead into longer line makers that both advertised and cataloged their goods. As a result new companies were being formed, factory space was rented (or even built), skilled workers were trained (to create a coin machine elite that formed the bed rock of the industry for another fifty years) and new machine development proliferated. The nickel-in-the-slot was moving out of the novel and into the normal.

The new patterns of the industry started in the east, with already involved machine makers changing their offerings and creating new affiliations. The Roovers brothers of Brooklyn, safely working with Percy G. Williams in 1889 after development of the AUTO-



Empty upstairs but still busy at the street level, the 1883 Roovers Manufacturing Company building at the busy corner of 23rd Street and 5th Avenue in New York City caters to a different crowd almost a century after its most famous occupants are long gone. Photography by Ken Rubin.

MATIC BATTERY in 1888, decided to go back to their own devices and go it alone once again, the way they had started. Throughout the Williams period, up through 1892, the Roovers brothers Alfred and Alexander, had made some of their own machines, including a COIN MICROSCOPE and a STRENGTH TESTING MACHINE, while their most clever automatons such as the AUTOMATIC MONKEY, AUTOMATIC ELEPHANT and AUTOMATIC DONKEY came out as Williams machines. The latter two fortune tellers accepted the Republican and Democratic roles in the national election campaign of November 1892 in which a rotund Grover Cleveland retook the presidency for a second time, having skipped one administration to Republican Benjamin Harrison, only to face the worst depression in the nation's history, to date. While labor unrest and public demonstrations became the order of the day — with Coxey's Army of unemployed marching on Washington at the end of April, 1894, and the bitter and bloody Pullman Strike taking place south of Chicago in May — the infant coin machine industry was maturing. When Percy G. Williams went off to pursue other novelty and public amusement interests, the Roovers, following in the fame of their mechanical fortune tellers, became a going concern. In their first effort out of the box, they created a truly elegant and amazingly clever all mechanical fortune teller automaton called MADAME ZITA, a lady in a box that passed out anything from chocolate bars to candy or printed fortune stubs when encouraged with a coin, with ZITA shaking her head and moving her hands in the process. "The automaton first bows, inclining its head forward. The arm then lifts the cover, exposing a package upon a shelf which



A marvel of the coin machine maker's art, the Roovers Brothers MADAME ZITA of May, 1895 was an all mechanical automaton that passed out fortunes, or could even vend chocolate bars. It was the beginning of the lady-in-a-box fortune tellers. Later fortune-only models were electrified. U.S. Patent Office.

is grasped by the hand of the arm, the latter moving forward for this purpose and closing the thumb down upon the package. The head, slightly inclined forward, follows the arm in this movement, turning upon its axis for this purpose. Having grasped the package, the arm moves away from the shelf, the head rotating in an opposite direction to that in which it has previously moved. The hand still continues to move toward the basket into which the package is dropped when reached. The head returns to its upright position which is followed by the elevation of the arm carrying the fingers to the mouth of the automaton, which are then cast outward, as it in the act of throwing a kiss, and the parts assume their normal position."[137] Over the years MADAME ZITA was advanced and improved, losing its vending capabilities to become a single-minded fortune teller, with an electrical model making its appearance as MLLE. ZITA in 1904. Meanwhile, an equally famous development of the same idea called PUSS IN BOOTS joined its ranks to create a pair of Roovers fortune tellers that survived in one form or another, once again rejoined by THE ELEPHANT and THE DONKEY, until the 1930s. While this developmental process was going on, the firm's most commercially successful product got its start. Originally created as a coin operated amusement park souvenir device, the Roovers MEDAL STAMPER of November 1900 soon evolved into the highly popular NAME PLATE MACHINE of May 1901. Along the way, the firm became the Roovers Manufacturing Company, with a move to Manhattan in 1902 and a dedication to "...make, acquire, trade in, install, become the bailee of, use, sell and bail machines, tools, mechanical and electrical appliances, and more particularly Die Presses or Name Plate Machines and Vending machines."[138]

The evolution of the Rosenfield Manufacturing Company in New York City was even more typical of the line selling trend and the growth of arcade machines. William W. Rosenfield started out as a chance machine designer with the pioneer Amusement Machine Company which had been formed at Jersey City in New Jersey in July 1890, with its offices in the lively business and dock area at 132 Nassau Street in New York City. Born in California in March 1867 when the gold rush of the 49'ers and the fifties was more memory than motion, young William found himself in New York City when the family returned to his mother's birthplace. After the death of his German born father, William continued living with his mother and younger sister Bertha. Rosenfield was only 23 when the Amusement Machine Company was formed, becoming one of the founders of this seminal shop along with four financiers and the same attorney that handled the legal affairs of the Clawson Slot Machine Company in Newark, new Jersey. A chance-taker that was mechanically clever, Rosenfield already



A machine manufactured for over 30 years, the Roovers Brothers NAME PLATE MACHINE of May 1901 was an advanced model of the MEDAL STAMPER of 1900. A 1902 advertisement in The New York Clipper notes it was an award winner at the Pan-American Exposition in Buffalo, New York. The New York Clipper, February 8, 1902.

had five years experience as a designer of plumbing fittings. A year later, William Rosenwield was President of the Amusement Machine Company, by then a highly successful producer of trade stimulators and automatic payout slot machines for saloon and other permissive locations, moving the firm to larger offices at 587 Hudson Street on July 1, 1894. Two years later, when it seemed that the popularity of the bartop gambling machines had reached their zenith, the four remaining stockholders decided to take their money and get out. Rosenfield, who held 878 shares out of a possible 2,191, was the second largest shareholder, topped only by William H. Gibson, an inveterate investor in coin machine ventures. Seeing a great future in the industry, although in a different line of goods, Rosenfield turned right around and formed his own Rosenfield Manufacturing Company with his sister, taking over the offices of the prior firm. By the time that the Amusement machine Company was dissolved on September 16, 1896, the Rosenfield firm had been in operation for two days.[139]

Rosenfield kept on producing the gambling machines, including a direct rip off of the Clawson THREE JACK POT, followed by copies of the Paul E. Berger electric payout floor machines made in Chicago (Rosenfield called one of his the NEW YORK) and the THE KLONDIKE counter and OWL floor machines of the newly formed Mills Novelty Company in Chicago. But while these copycat coin-ops paid the rent, Rosenfield was working on his own brilliant ideas. By the end of 1900, he had "The latest novelties. Punching, Picture, Lung Testing, Electricity, Grip and Vending Machines" as the largest line producer of coin machines in the east.[140] The jewel in his crown was a coin operated stereo viewer that he had engineered in 1899, literally creating a new form of entertainment. "The PHONOGRAPH and KINETOSCOPE had been combined in...Rosenfield's ILLUSTRATED SONG MACHINE, a coin cabinet in which a phonograph record was co-ordinated to play while a series of drop pictures clicked off, and the patron was given a 'talking picture' he could see and hear. This idea, incidentally, was not new and can be traced back to the similar KINETOSCOPE, marketed by Edison in 1895," although the Rosenfield device was far studier and exhibited a series of stereos illuminated by an electric light rather than the single sequence in motion.[141] Edison had, in fact, made provision for the use of stereo images in his KINETOSCOPE patent, but never used them. It would be a few years before the Rosenfield machine received its proper name, being descriptively called the AUTO–STEREOSCOPE in the beginning, sold in both plain and MUSICAL AUTO–STEREOSCOPE models. It was first introduced in the late summer of 1899 by the Auto-Stereoscope Company of 779 Greenwich Street in New York City, more than likely a separate marketing arm of the Rosenfield firm to position the new peep show apart from the gambling machines for which the firm had become known. The advertising reflected the difference, with a dramatic headline that stated, "No Law Can Stop Our AUTOMATIC, NICKEL-IN-THE-SLOT PICTURE MACHINE," with body copy going on to say that the machine illustrated in line art on a pedestal (and looking virtually identical to the oak ARTOSCOPE in the American Auto-Machine Company ad that generally appeared next to it) "Earns big money; never gets out of order. Will pay 1,000 per cent on investment. Hundreds in use. For saloons, hotels, cigar stores, resorts, etc. Exclusive agencies given."[142] In December, when the musical version was first advertised, a halftone cut of the machine was used, unmistakably showing the Rosenfield model while the word "MUSICAL" was added before



The success of the NAME PLATE MACHINE led to larger quarters and a company name change to the Roover's Manufacturing Company. This March 1904 advertisement announces the latest NAME PLATE MACHINE MODEL A version. Prices had dropped in half from 1902. The New York Clipper, March 26, 1904.



William Rosenfield — also believed to be the man in the picture — took the puncher out of the bar and made it a viable arcade piece. The trend was started with the Rosenfield Manufacturing Company SCIENTIFIC PUNCHING MACHINE of December 1900. The high dial let other see the results of the punch. Bueschel Collection.

If You Want Everything Clean and Bright, Try
BAR KEEPERS' FRIEND METAL POLISH.
Pound box 25c. at Druggists and Dealers.

SLOT MACHINES.



SLOT PUNCHING BAGS
$25.00 Each.
Will Earn $10.00 Per Week.
Biggest money making proposition ever offered. Can be placed everywhere.
ROSENFIELD MACHINE CO.,
587 Hudson St., New York.
Makers of all the latest Slot Machines.

SLOT MACHINES. 100 Varieties; from 1.50, up. Get our CUT PRICES. New catalogue of CLUB ROOM & FAIR GROUND GOODS. Address, OGDEN & CO., 253 Clark St., CHICAGO, ILLS.

THE BANNER SIX-WAY AUTOMATIC SLOT MACHINE is the best ever built by anyone at any price. Made only by McDonald Mfg.Co.,85 Dearborn St.,Chicago

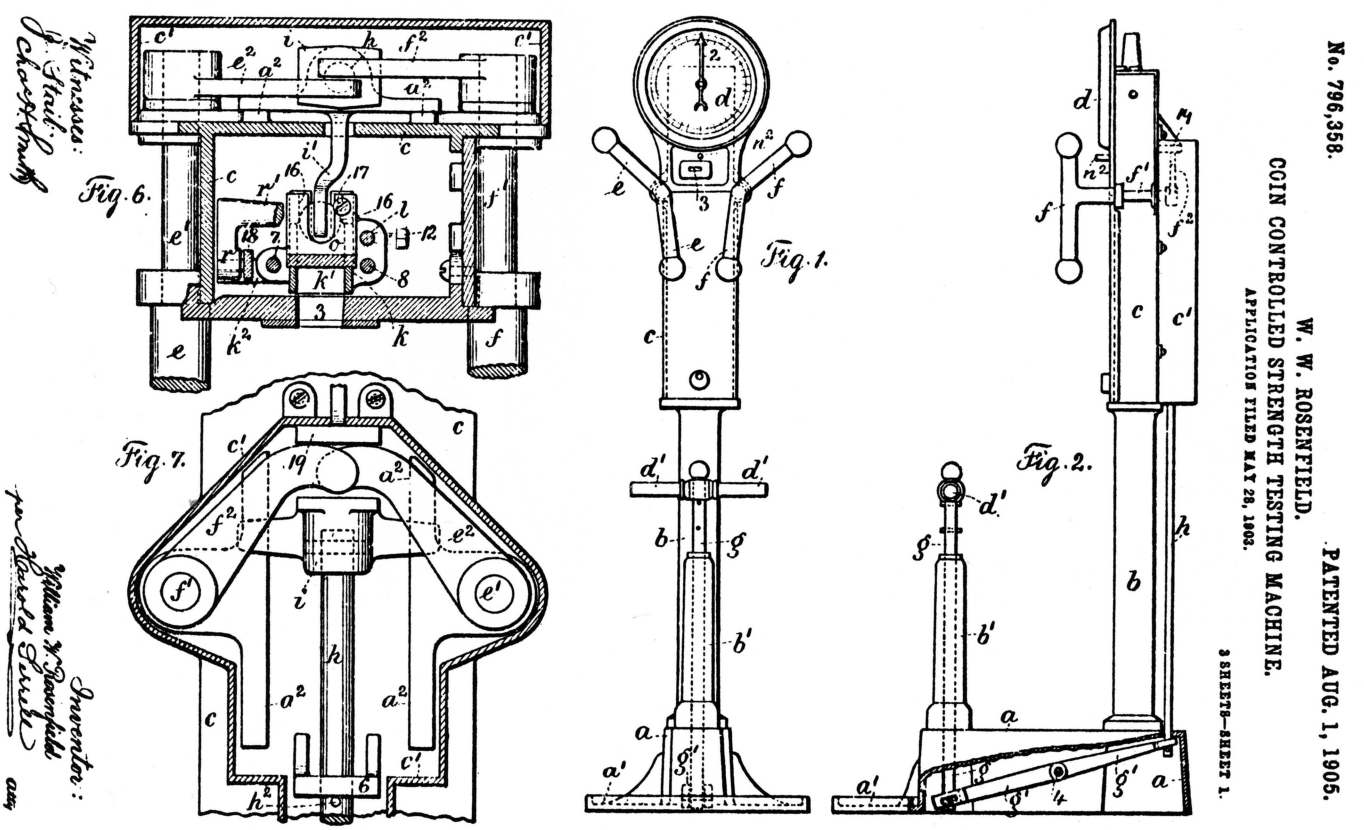
Slot Machine Mechanic on Automatic or Electric Machines wishes position with operator or first-class concern. Address H. Vermer, 501 Belden Avenue, Chicago.

Widely advertised as a machine that "Can be placed everywhere," the SCIENTIFIC PUNCHING MACHINE put the Rosenfield firm on the map. This typical ad appeared in April, 1902. The National Police Gazette, April 19, 1902.

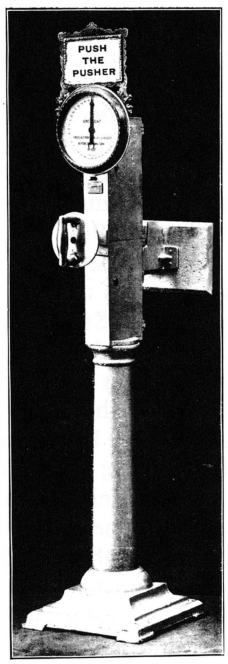
the word "PICTURE" in the headline.[143] In February, 1900, once a patent had been filed in Rosenfield's name, the same ad started to carry the Rosenfield Manufacturing Company tag line.[144]

The Rosenfield patent for the AUTO-STEREOSCOPE was significant in that it represented the creation of a new, mass produced peep show by the first inventor not involved with the Edison machines, the beginning of a trend. Up until the arrival of the Rosenfield stereo machine, Thomas A. Edison's influence (and that of W.K.L.Dickson) was so pervasive, every device that came down the pike was measured against the product of the the Wizard of Menlo Park. William W. Rosenfield changed that, obtaining a patent on November 10, 1903 so complete and all inclusive that it would lead to a bitter patent battle with the Mills Novelty Company of Chicago 3 plus years later over who would dominate the growing arcade peep show market.[145] Meanwhile, the patent formed the basis for a broad line of Rosenfield stereo picture machines, before it was issued and afterward, including the REGENT of 1900, in both plain and musical models, the VICTORIA of 1901, a 1902 cabinet size photo version of the REGENT called the VAUDOSCOPE, and finally the namesake ILLUSTRATED SONG MACHINE in 1902, the latter followed by improved 1903 and 1904 models. Sales literature informed potential buyers that "The photographs used in this machine are the regular Stereoscopic views, which can be had from various photographers throughout the world," taking Rosenfield out of the nasty film taking and inventory business.[146] Rosenfield sold machines; let the customers go elsewhere for their software.

It was Rosenfield's next leap forward — actually, a reach backward — that filled out the line and made a Rosenfield machine a necessary adjunct to any arcade operation. Rosenfield took the puncher and its John L. Sullivan associations out of the backroom of the saloon and put it in the front hall of the arcade. In his SCIENTIFIC



An advanced development of the barroom physical test machines of the past, the Rosenfield UNIQUE COMBINATION of the summer of 1903 refined the elements and modernized the package. A wide variety of Rosenfield machines were based on this patent. U.S. Patent Office.



Patented November 10th, 1903
Height, 6 ft. Base, 17 ins. Square
Weight, Boxed for Shipment, 190 lbs.

...The Ajax... Pushing Machine

THIS machine registers accurately the amount a person can push, and is operated by dropping a cent in slot, and then pushing on the handle, the dial registering exactly the amount of the force expended. The mechanism of this machine is similar in construction and operation to that of our Defiance Punching Machine. The indicator remains at the point registered until the button is pushed, when it returns to zero. The machine has a self-cleaning coin mechanism, which prevents clogging.

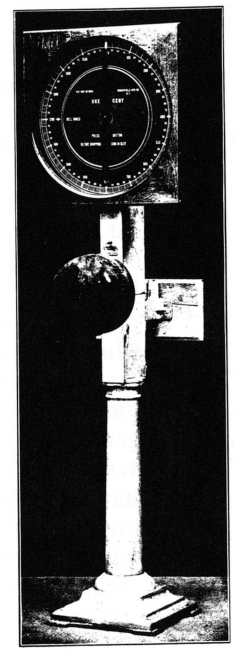
It is made entirely of iron, neatly painted, with nickeled handle and trimmings, and will stand rough usage. It is adapted for outdoor as well as indoor use.

CAN BE ADJUSTED FOR PENNIES OR NICKELS

MANUFACTURED ONLY BY
Rosenfield Manufacturing Company
585 to 589 Hudson Street
New York City

Bueschel Collection.

Defiance Punching Machine



Patented November 10th, 1903.
Height, 7 ft. Base, 17 in. sq. Weight, boxed for shipment, 325 lbs.

THE dial is extra large, being 21 inches in diameter and has large figures, reading to 1,600, which can be seen at a distance. Actual experience has demonstrated that it will earn 400% more than the old style small dial machines. Noiseless in operation. Guaranteed for one year from date of purchase.

Made entirely of Iron except the casing for the dial, which is of polished quartered oak

Will Last a Life-time ✕ Artistic in Design Will Stand the Roughest Usage

Adapted for Outdoor as well as Indoor Use

THE Punching Bag is 12 inches in diameter and 5 inches thick, and is made of curled hair with cushion springs and covered with the best and strongest leather obtainable. All the materials used are the best that money can buy.

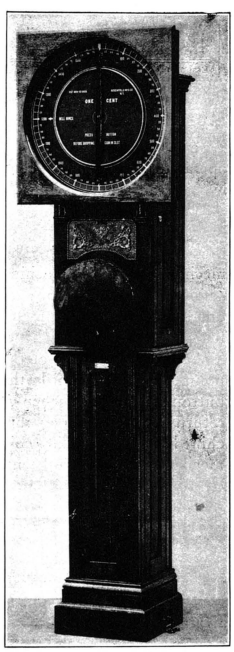
HAS Self-Cleaning Coin Mechanism which prevents clogging. It is constructed of the best workmanship throughout and the mechanism is made entirely of steel and iron and is the production of the most skilled mechanics in the United States and **will not get out of order.**

THE blow can not be registered on the dial until a cent is dropped in slot. The force of the blow in pounds is then indicated accurately on dial. The indicator remains at point punched and by pressing button it returns to zero.

MANUFACTURED ONLY BY
Rosenfield Manufacturing Company
585 to 589 Hudson Street
New York City

Bueschel Collection.

Height, 7 feet. Width at base, 15 in. Depth, 15 in.
Weight boxed for shipment 275 lbs.



Patented November 10, 1903

The TRIUMPH PUNCHING MACHINE

Substantially the same in operation and construction as our "Defiance" Punching Machine

except

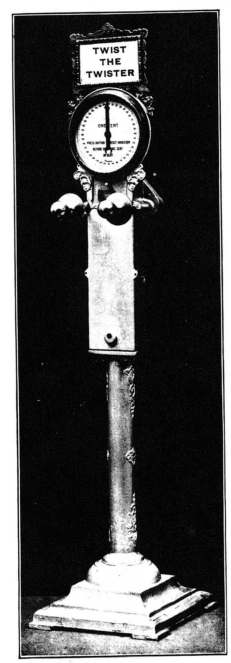
that the Cabinet is made of polished solid quartered oak, extra heavily reinforced, and is intended to stand rough usage.

The dial is extra large, being 21 inches in diameter, and has large figures, reading to 1,600, which can be seen at a distance, and is much more attractive and fascinating than the old style small dial machines.

Can Be Adjusted for Pennies or Nickels

MANUFACTURED ONLY BY
ROSENFIELD MANUFACTURING COMPANY
585-589 Hudson Street New York

Bueschel Collection.



Patented November 10th, 1903
Height, 5 ft. 6 in. Weight, Boxed for Shipment, 198 lbs.
Base, 17 ins. Square
ALBERT J. SVOBODA
24th & BUTLER ST.
CHICAGO HEIGHTS, ILL

...THE...

Monarch Penny Back Machine

THIS Machine is precisely the same in construction as our Peerless Machine, and differs only in operation in that it has two knobs instead of a wheel. After dropping cent in the slot, both knobs are grasped, one in each hand, and twisted toward each other.

The dial indicates the strength of the player, and if the player can make the dial register up to 650, the penny will be automatically returned to him.

Perfectly Legitimate and can be Operated Everywhere, as it is Not a Game of Chance

MANUFACTURED ONLY BY
Rosenfield Manufacturing Company
585 to 589 Hudson Street
New York City

Bueschel Collection.

PUNCHING MACHINE Rosenfield made the second most violent amusement machine (the punching bag came first, although it was yet to be popularized) a commanding piece of arcade furniture with its massive oak cabinet and high mounted dial, permitting any and all local toughs to see the results of the latest blow. So who was meaner, or stronger? Did the Rosenfield puncher take fighting off the streets and put this aggression into an operator's cash box? It would be nice to think so, but human nature being what it is, it is unlikely. There were rumors to the effect that

William W. Rosenfield put his own picture in his puncher advertising and promotion to aid in his sales efforts, adding a classy dressed-up touch to a machine that had long suffered a sweaty, gym workout image.[147] However he did it, Rosenfield almost single-handedly made the puncher — and through it the punching bag — a viable if not the most popular physical machine in the arcade, a position it retained for at least a decade. With the peep shows of a few years hence turning more erotic than entertaining, and the punchers bringing in the grunt and groan traffic, the early ideal of making the arcade a family center that welcomed women and children would soon disappear. But not immediately. The popularity of the Rosenfield punchers led to a long line of the devices, both in reduced size and including added features, such as the iron HERCULES PUNCHING MACHINE of 1902, the wooden cabinet TRIUMPH PUNCHING MACHINE of late 1903, the DEFIANCE version the the TRIUMPH on an iron stand, and others that followed. Continuing in the athletic physical test vein, Rosenfield produced his unique combination press, pull, grip and lift machine in the summer of 1903, adding a broad line of lift, press, pull, twist and penny-back models over the next few years. Assuming the business would progress as it had, Rosenfield could bask in the confidence that he had established his house as the leading purveyor to the trade. And it would have been had not the arcade and amusement machine industry exploded into a plethora of new ideas and new machine approaches, bringing with it the growth of the giant midwestern producers of Caille in Detroit and Mills in Chicago, although by the year 1900 that hardly seemed possible. The next two years changed everything and like it or not, the Rosenfield Manufacturing Company soon found itself in a battle for survival.

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[137] Alfred W. Roovers and Alexander H. Roovers, of Brooklyn, New York, *Vending-Instrument*, Applied: May 2, 1895; U. S. Patent No. 553,872, February 14, 1896.

[138] Certificate of Incorporation, *Roovers Manufacturing Company*, Dated: November 28, 1902. Filed and Recorded: November 29, 1902, Department of State, State of New York.

[139] Researches in The New York Public Library; U.S. Census records for 1900; Articles of Incorporation, *Amusement Machine Company*, Dated July 15, 1890. Filed, July 18, 1890. Secretary of State, State of New Jersey; Certification of Incorporation, *Rosenfield Manufacturing Company*, Dated: September 11, 1896. Filed and Recorded: September 14, 1896. Department of State, State of New York.

[140] Classified advertisement, Rosenfield Manufacturing Company, 587 Hudson St., New York, *The National Police Gazette*, December 1, 1900.

[141] "The Penny Arcade," *The Billboard*, March 15, 1947.

[142] Display advertisement, Auto-Stereoscope Company, 779 Greenwich Street, New York, *The National Police Gazette*, August 19, 1899.

[143] *Ibid*, December 30, 1899.

[144] Display advertisement, Rosenfield Mfg. Co., 583 Hudson Street, New York, *The National Police Gazette*, February 24, 1900.

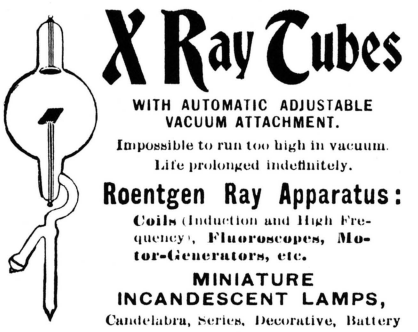
[145] William W. Rosenfield, of New York, N. Y., *Picture-Exhibiting Machine*, Applied: February 19, 1900; U.S. Patent No. 743,930, November 10, 1903.

[146] *Slot Machines - The Kind that Always Work*, Catalog, Rosenfield Manufacturing Co., 585 to 589 Hudson Street, New York, January 1906. Rick Crandall, Ypsilanti, Michigan, Collection.

[147] Recounted by coin machine historian Fred Fried to author Dick Bueschel in New York City, January 17, 1978, but unconfirmed.

AUTOMATIC VAUDEVILLE

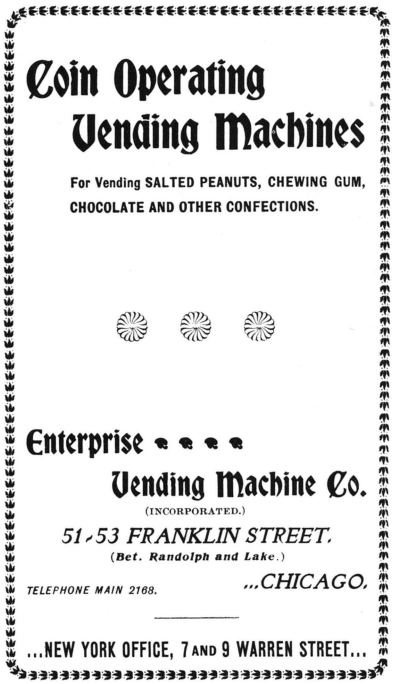
The difference between the English and American dance halls went far beyond their separation in miles. The Brits loved their singing and skirt swirling dancing ladies, whereas the American tastes were far broader and more ecumenical. Counting horses, clapping seals and noisy dog acts were intermixed with popular songs and a luscious leg, making the truly indigenous American stage entertainment of Vaudeville a wonder to behold. (In later years, radio and TV comedian Jack Benny, who came up through Vaudeville, would say "never follow a dog act," because they were so popular). Starting with an Anglo-Saxon theatre heritage, taking a French name for light plays with music, and then whirling both into a maelstrom of acts and action, vaudeville included comedy, magic, acrobatics, recitation and song-and-dance routines to name but a few. By the 1890s it was the most popular form of commercial entertainment in the country with ten times the attendance of any other.[148] Yet just as this new form of American theatre was taking root, along came coin machines. The comparison was quick and logical. Coin operated amusement machines were Automatic Vaudeville. The coining of the expression is credited around 1901 to Art Caille of Detroit, the most gregarious of the two Caille brothers who, by 1905, would be the second largest producers of arcade machines in the country, but it seems to have been in some use before that. The agnomen couldn't have been more apt. Every form of mechanical amusement and entertainment (even a few living ones, including coin-operated mouse act cages and a somewhat gross "Perfectly Preserved, life-size exhibit" for the MUTOSCOPE called LIVERMORE'S LIFE REEL) were soon under coin control, with arcade machines quickly giving the real vaudeville a run for its money (although it never unseated its host. That dubious honor fell to the movies, with the legendary death of vaudeville coming when New York's Palace Theatre converted to an all film bill in 1932 and two generations of acts could never again "Play the Palace"). The machine varieties in these early years were endless and, in a few cases, downright dangerous, although it wasn't known at the time. When Professor Wilhelm Konrad Roentgen made his won-



The heart of the most dangerous arcade machine ever made, the Edison Lamp (later GE) X-Ray Tube. It was used in the National X-Ray Company X-RAY MACHINE of 1903 and the Edison Manufacturing Company X-RAY MACHINE of 1904. Players viewed the bones in their hands. Scientific American, December 11, 1897.



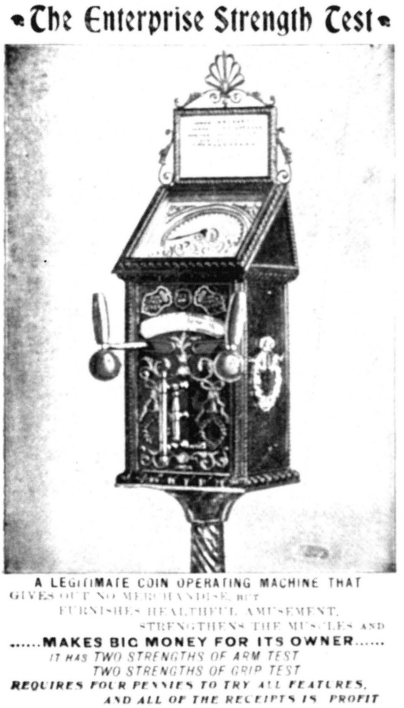
The most popular arcade-type machine of its day, the ELECTRICITY IS LIFE shocker was introduced by the Midland Manufacturing Company of 84-90 State Street in Chicago early in 1899. It was produced by many makers for the next twenty years. The New York Clipper, October 21, 1899.







Midland sold out to the Enterprise Vending Machine Company of Chicago in 1901, who continued to market the popular shocker as THE DIAMOND, a name taken from its shape. They were probably selling off Midland stock as the price was cut in half. Courtesy James D. Vasey.





Enterprise Vending continued to market the Midland NEW CENTURY STRENGTH TEST MACHINE as the Enterprise STRENGTH TEST MACHINE. It took four cents to play all the features. Courtesy James D. Vasey.

drous discovery of Roentgen rays in his laboratory in Wurzburg in November 1895 — he called them X-rays because he couldn't explain them — and they X-rayed his wife's hand wearing a gold ring, he created a world sensation. He presented his findings at a medical society meeting on December 28, and before the next year was out, a coin-operated X-STRENGTH AUTOMAT (AUTOMATIC X-RAY) was being placed on German locations. In Great Britain, the Interchangeable Automatic Machine Company, later to take over the British Mutoscope firm, had their own X-RAY MACHINE by 1898. It was one of the most successful machines they ever made. The fad skipped the ocean with the National X-Ray Company located at 11 East 14th Street in New York City producing a coin-op X-RAY MACHINE in 1903. Even the mighty Wizard was caught up in the flurry, with the Edison Manufacturing Company in Orange, New Jersey, producing the Edison X-RAY MACHINE to order in 1904, the unit operating on a five-inch induction coil and having three tubes.[149] A competitive CATHOSCOPE was made by Louis Hammerschlaag in Philadelphia the same year.[150] By the time it was



The Sapho Manufacturing Company of Chicago was the strongest competitor to the MUTOSCOPE with their SAPHO peep show of 1898. Two are shown here on location along the right wall above the "Gents Toilet" basement stairs. The saloon is the Cabinet Club of Tuscon, Arizona. Proprietor Louis Araneta is in the center in white. Arizona Historical Society.

confirmed that massive or extended exposure to X-rays would most certainly lead to cancer the machines had come and gone, leaving the thousands who gleefully viewed their bony hands with a Mark of Cain that would reveal itself years later. Those who died probably had no idea that their affliction was tied to an amusement machine. It taught the watchful industry a lesson in understanding effect before proceeding with any cause.

The machines brought joy, too, with the positives of play far exceeding any negatives. The shockers became public playthings (although they, too, had their down side. Some people with heart trouble couldn't take the twitch) with the ELECTRICITY IS LIFE (picking up a pseudo medical phrase of the day) countertop machine made by the Midland Manufacturing Company in Chicago, starting in April 1899, becoming the single most popular physical test coin machine in the country. It was advertised in media as diverse as the *New York Clipper,* a weekly show business and exhibitors' paper; the saloon reading *The National Police Gazette* and *The Retail Druggist* to sell direct to locations. Inventor William C. Backof backed into his profession of coin machines as a St. Louis producer of draperies and curtains, bringing his business to Chicago and picking up two partners named Aaron J. Jones and Adolph Linick, with the three forming Midland early in 1899 to produce Backof's coin machine. By the end of 1900 Backof had sold out his interests to a rapidly growing Mills Novelty Company while his partners remained with Midland, producing more shockers and strength testers as well as opening arcades at 85 Madison Street and 178 and 208 State Street in downtown Chicago. By 1908 they were in the Theatre business, owning and operating the Orpheum Theatre at 176 State Street on the site of their old arcade, later running an arcade at 336 S. State Street during World War 1, a flop house and skid row area that wasn't cleaned up until the 1950s and major Chicago expressway building.[151] Under the tutelage of Jones and Linick (the latter's son became a major Detroit Arcade owner and machine distributor and producer in the 1920s under the name of The Casino Amusement Company) Midland marketed the NEW CENTURY STRENGTH TEST MACHINE created by Helmuth Messmann of Chicago, a four-in-one arm and grip tester that took four coins to operate all of its features. In late 1902 Jones and Linick sold out their machine lines to the Enterprise Vending Machine Company at 51-53 Franklin Street, in a gloomy industrial district, the latter firm continuing to make and sell the machines for another five or six years,



Later SAPHO models were made by the Paul E. Berger Manufacturing Company and its receiver, the R. J. White Company, of Chicago Ridge, Illinois. Here a White SAPHO, center right, is on location in the Merchants Hotel, Columbia, Goldfield, Nevada, circa 1904. Operator Billy Schmidt, of Fon du Lac, Wisconsin, is in the striped tie in the center of the picture, facing the camera. Note the lady of the evening at the bar. Courtesy Florence Schmidt, Wisconsin.

first as Enterprise and later as the White Vending Company. ELECTRICITY IS LIFE became THE DIAMOND and the NEW CENTURY STRENGTH TEST MACHINE simply the STRENGTH TEST MACHINE.

Other machine ideas as clever had production histories just as convoluted. When the MUTOSCOPE began to hit its stride by the late 1890s, an obscure copycat approach to flipping the cards, yet unique enough to receive a patent, was picked up by the newly formed Sapho Manufacturing Company in Chicago, a venture of Frank S. Chance of fairly nearby Indianapolis, Indiana. His approach to the peep show was similar to the MUTOSCOPE in that his patentable system was based on "...consecutively displaying a series of pictures with sufficient rapidity to give the figures in the picture the appearance of moving (while providing) an inexpensive means...for securing the sheets evenly upon the center roller or shaft...in such a manner as to give the desired effect when they are rotated, a means for rotating said central shaft and a means for causing each succeeding picture to instantaneously take the place of the preceding picture and to allow each picture, as it appears, to stop long enough for the image to become fixed upon the retina of the eye."[152] By attaching the photographic prints to be viewed directly to an offset central shaft and flipping from a curve, the Chance system permitted more and larger images to be packed on the drum. Rather than pass this extended time on to the consumer for longer peep shows, the Sapho approach was to utilize full size stereo views, holding "...48 views, 12 being seen with each operation of the machine...made to be operated with a nickel or penny (with the machine showing) four different sets of pictures with a sensational realism only equalled by the human eyes."[153] Sapho called its first 1897 machine the QUARTOSCOPE because it showed four shows. By the fall of the year the upgraded DELUXE SAPHO QUARTOSCOPE was being produced, and by 1898 the various models of the machine were simply called the SAPHO.

The machine was picked up by the Paul E. Berger Manufacturing Company, at the time the largest producer of coin operated gambling machines in

Chicago. Recognizing the rapid growth of arcade machines, and not wanting to lose position in the coin machine industry, Berger had entered the field by taking one of its electrically operated floor model gambling machines and making it into an all mechanical non-electric model, fitting a fortune wheel instead of the color-and-number wheel of the pay-out version. Berger also made a LIFT AND HAND TEST machine, and added the SAPHO in 1900. By 1902, when the firm was taken over by receivers following a disastrous lawsuit, SAPHO, REGINASCOPE, AUTOMATIC SAPHO and QUARTOSCOPE models had been produced, with the machines enhanced by the patented Berger coin chute. The receiver, in turn — a former Berger employee named Ripley J. White — kept making the SAPHO under the name of the R.J. White Company, later the White Manufacturing Company and finally, as a marketing arm only with no production capability, continued to sell the machine under a new company name, as the White Vending Company, the same outfit that had picked up the Enterprise Vending products. Meanwhile both the mighty Mills Novelty Company in Chicago and The Caille Brothers Company in Detroit also acquired the machine, Mills in 1900 and Caille in a revised version a few years later, to make the now generically named QUARTOSCOPE (although Mills called its first model the SAPHO QUARTOSCOPE) a major piece in their growing lines.

British development also leapt forward. With peep shows and shockers the most popular arcade machines, their creation proliferated. Joseph Mason And Company were making the MUTOSCOPE for British Mutoscope by late 1899 while Hayden And Urry, Ltd. of London were making their popular CRITERION shocker by 1900, along with half a dozen other machines, including target and amusement games. With reorganization of the firm in September, 1902 as W. Hayden And Company, with both William Hayden and Frank H. Urry involved in machine design and production engineering, product development accelerated. In their first year in business they offered fifteen different machines, three of which were peep shows and one a shocker. The others were fortune tellers, souvenir dispensers and that new form of machine that would ultimately form the backbone of the arcade in Britain and America, the novelty card vender. Machines that told the CHARACTER FROM THE COLOUR OF THE EYE, or the same by THE HAIR — and these were the machine names — created a new amusement as well as a keepsake product, the arcade card. It would be a few years before the idea was picked up on the American side of the Atlantic, led by the Mills Novelty Company, but once it hit it wouldn't go away again for another fifty years. The card machines became the arcade rent payers. But in the early 1900s that job fell to the peeps and shockers. Hayden, with their ERASCOPE and ERAGRAPH machines of 1902, soon followed by the AUTOCOSMOSCOPE, had the field well covered. The names



A rare look at the outside of a location. This is the Merchants Hotel at Columbia, Nevada. The barroom that contains the R.J. White SAPHO peep show is behind the lettered glass to the right. Courtesy Florence Schmidt, Wisconsin.



One of the first of the long line of coin machine producers, the Leo Canda Company of Cincinnati introduced their PICTURE MACHINE in 1900. They later changed their firm name, and ultimately sold out to the Mills Novelty Company of Chicago. The Billboard, March 17, 1906.

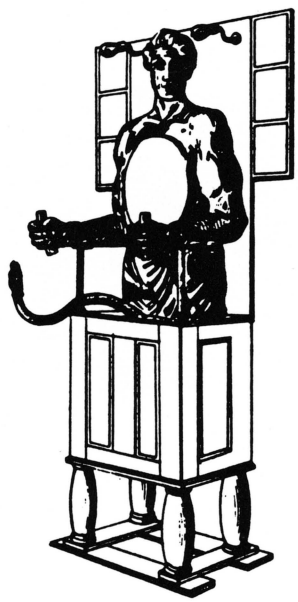
DESIGN.

No. 37,487. PATENTED JULY 11, 1905.

M. BORSODI.

STAND FOR AUTOMATIC VIBRATING MACHINES.

APPLICATION FILED MAY 17, 1905.



Witnesses:
J. McGowan Jr.
Jno. C. Miller.

Inventor
Morris Borsodi,
By Mason, Fenwick & Lawrence
Attorneys

No. 37,487. Patented July 11, 1905.

UNITED STATES PATENT OFFICE.

MORRIS BORSODI, OF NEW YORK, N. Y.

DESIGN FOR A STAND FOR AUTOMATIC VIBRATING MACHINES.

SPECIFICATION forming part of Design No. 37,487, dated July 11, 1905.

Application filed May 17, 1905. Serial No. 260,904. Term of patent 14 years.

To all whom it may concern:

Be it known that I, MORRIS BORSODI, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented and produced a new, original, and ornamental Design for Stands for Automatic Vibrating Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part thereof.

The figure is an elevation showing my design.

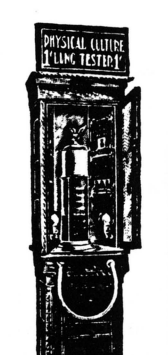
I claim

The ornamental design for a stand for an automatic vibrating machine, as shown.

MORRIS BORSODI.

Witnesses:
HUGO MOCK,
IRA JAY DUTTON.

A former machine designer for Leo Canada, Morris Borsodi moved to New Jersey where he made his DOCTOR VIBRATOR electric machine in 1904. He sold the rights to Tom Watling in Chicago where the Watling Manufacturing Company produced it as the DOCTOR, placing it in their White City arcade. U.S. Patent Office.



SLOT MACHINE AUTOMATIC LUNG TESTER.

Operated by depositing a penny. It is the handsomest and most graceful machine of its kind, and is an immense money maker. These machines are made entirely of quartered oak cabinets, highly polished, lined with red velvet, and has conspicuous red signs. They show the exact number of square inches of air the lungs contain, and show the space the air takes up when in one's body.

MADE ONLY BY THE

Physical Culture Manufacturing Co.,

Office and Salesrooms, 302 West 16th St.; Factory, 125 Eighth Ave., New York City, N. Y., U. S. A.

Send for Circular and Price List.

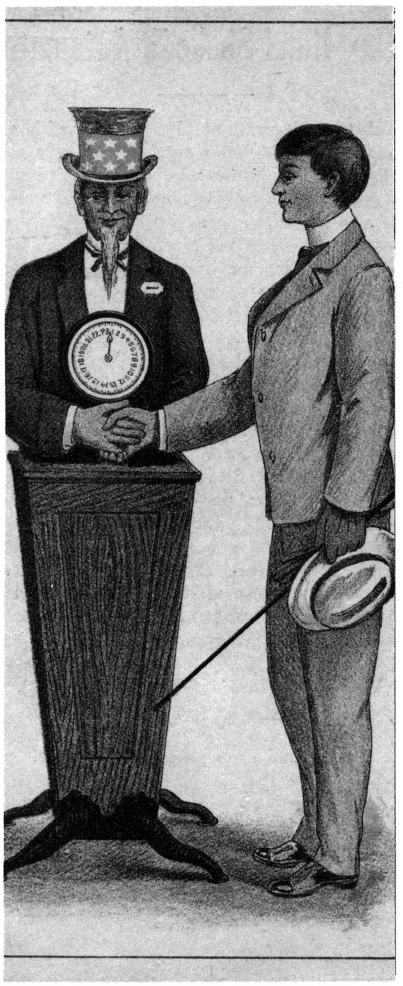
Left: All sorts of one model machine producers popped up all over the country in the early 1900s. The PHYSICAL CULTURE LUNG TESTER of 1904 is the only machine ever made by the Physical Culture Manufacturing Company of New York City, and it disappeared fast. New York Clipper, June 11, 1904.

and machine formats covered two 12 view still picture viewers with side cranks and an automatic viewer sans crank. Covering the lucrative business of the electrical shocker was the attractive HAYDON-PREMIER, coming in a teak, walnut, mahogany or a more expensive polished oak cabinet. Having two charged grip knobs on the side, along the lines of Midland's ELECTRICITY IS LIFE, the machine looked as different as night to day, providing a distinctly British shocker appearance.

By now the cross pollination ties between the United States and Great Britain were solidly going both ways, with the coin machine producers on both sides of the pond scouting each other for new ideas and machine formats. What had been largely a British invasion was turning into an American asset. Before the decade was out the American producers had created an enormous export market in England and Europe, whereas the British sold very little in the Western Hemisphere, except in Canada. American dominance was on the rise. It would have been difficult to explain had the machines remained the same, but such was not the case. A dynamic of design struck the American industry in the first years of the Twentieth Century, with most new machines different from the last, with the new ideas often made by a single model producer. In 1901 alone, barely 15 years after the first American arcade machine came to market as THE LOCOMOTIVE in December, 1885, over 60 new arcade machines were introduced. Over a third of them were made by single model producers. By contrast, in Great Britain in the same year, about a dozen

F. J. HOWARD,
MANUFACTURER AND OPERATOR OF
AUTOMATIC SLOT MACHINES
Also Exhibitor and Selling Agent for EDISON'S MOTION PICTURE MACHINES, FILMS AND SUPPLIES OF ALL KINDS.
Telephone Oxford 1024 3
564 WASHINGTON ST., Jefferson Bldg., BOSTON.

The only major coin machine maker in Boston, F.J. Howard created a number of original machines between 1898 and 1905. Howard was also a dealer and operator of Edison movie projection films and equipment. Courtesy Boston Public Library.



"The Hand-Shake" Automaton.

A most original creation! Uncle Sam, with a jovial smile on his face, stretches out his hand for a hearty "How-do-you do?" Now who could resist grasping same? But Uncle Sam is all business, and unless you put a coin in his buttonhole (slot), you will not stir up his inner man; on inserting a coin in the slot, however, the dial will register the exact strength of your grip, and act as referee in strength-testing contests.

Wherever the machine is placed there is a veritable scramble for it, by old and young, and it is one of the best money makers on the market.

The machine is all metal painted in life-like colors and exceedingly simple and durable. We agree to replace any part which may be broken within two years, if same is sent to us, transport prepaid. When ordering please state whether you want the machine to work with a Cent or Nickel. Orders for foreign countries should be accompanied either by the respective coin, or an exact drawing thereof, giving size and thickness. Order promptly and reserve exclusive rights for your territory. With a number of these machines placed in Cafés, on street corners, and other public places, you can earn a good income during your spare hours.

Weight, 100 lbs. (without stand, 45 lbs.).
Size, 5½ feet high.

Design and other patents applied for.

Price $45. Deposit amount with any express company and same will order the machine for you, or send $15. with your order and you will receive the machine C. O. D. for balance, by express or by freight.

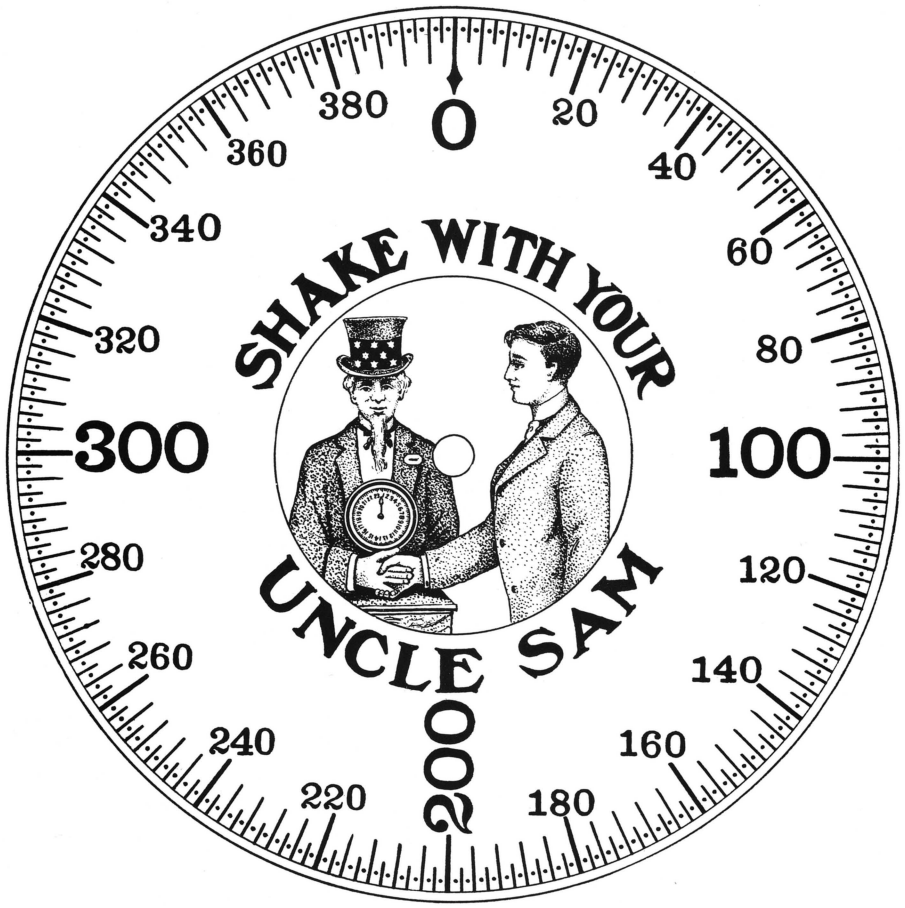
F. I. HOWARD,
564 Washington St. BOSTON, Mass.

A typical example of full color stone lithography printing of coin machine promotional materials. The lifelike appearance of 4-color process printing was just around the technical corner. Howard's THE HAND-SHAKE was introduced in 1904. Bueschel Collection.

new arcade machines were brought to market, although the inventive relationship was about the same, with one third made by new single machine makers. That meant that on both sides of the Atlantic one out of every three new machines was introduced by a new producer. It also meant that the United States was out inventing and out producing its British counterparts at a rate of about five to one. It wasn't long before the center of coin machine development was American.

This shift in dynamic also meant that large coin machine factories were finding acceptance in America, with a prognosis of the large getting larger as the new producers often sold out to add their machines to larger lines once the price was right while as often as not suffering the indignities of watching their machines being copied without recourse. Both forces built the larger lines. On the selling side, The Leo Canda Company of Cincinnati, Ohio, established as a trade stimulator and chance coin machine builder since 1895, moved into the arcade area in 1900 with their PICTURE MACHINE peep show. Five months after the floor machine was introduced a counter model, designed by one of the first professional arcade machine designers, Morris Borsodi of Cincinnati, came out.[154] After selling out their chance machine lines to the Mills Novelty Company of Chicago, Canda reformed as The Leo Canda Manufacturing Company in 1902, and continued on with their peep shows and other arcade and vending machine lines. Then Leo Canda packed it all up and moved his interest to New York City, taking Borsodi with him. With Canda set up at 108 Fulton Street in the city, Borsodi proceeded to invent away, creating a master of a three-dimensional machine called the DOCTOR VIBRATOR in 1904, applying for a design patent in May, 1905.[155] Seemingly more than Canda wanted, Borsodi had the machine produced for the New York Export Company and then sold the rights to the newly formed Watling Manufacturing Company in Chicago, a full line competitor to Mills Novelty Company and The Caille Brothers Company that was formed in 1903 by the two Watling brothers, John and Tom, who had started their coin machine careers in Cincinnati. The Watlings proceeded to produce their new acquisition as the DOCTOR, picking up the other Canda arcade machines to add to their PICTURE MACHINE lines. In contrast, Frank J. Howard of Boston, who had himself been a coin machine builder since 1894, created machines that were quickly gobbled up by his competitors. Early in 1904 he built THE HAND-SHAKE, a grip test that was in the shape of an Uncle Sam automaton. By that summer the New York Export Company had it as UNCLE SAM, and in later years it was copied by both Mills and Caille. The same year Howard created the LOVE LETTER, a novelty card vender that vended love notes or fortunes. Later that year Mills copied it as CUPID'S POST OFFICE, followed by Caille a few years later, although the Howard machine became an industry standard and survived until around World War 1, when refill cards were still available from a variety of sources.

Thus it happened that in the early



The register dial on the F.J. Howard THE HAND-SHAKE of 1904. Howard made the machine as a grip test, The features were enhanced and changed in the UNCLE SAM copies made by Mills and Caille. Bueschel Collection.

years of the Twentieth Century hundreds of new entertainment and amusement coin machine ideas hit the streets, as many or more than there were vaudeville acts. And like vaudeville some were instantly popular while others were flops; some survived for years while others only lasted weeks. In the process arcade machines spawned an ancillary industry in the movies, the only other form of commercial entertainment that challenged the cash box of coin machines. By the first few years of the New Century the two forms of entertainment were racing each other for the fruits of the nation's pocketbooks. In the years ahead, well into the 1980s, movie ticket sales and coin machine receipts would be eerily equal, give or take a few percentage points, as vaudeville gave way to film and automatic vaudeville found new voice as the loudmouthed video game. Both industries ultimately realized they were in the entertainment business and were bound by the choices of a fickle public that voted their likes with tickets or coins and their dislikes by avoidance. But that's Show Biz!

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[148] Don B. Wilmeth, *The Language of American Popular Entertainment*, Greenwood Press, Westport, Connecticut, 1981.

[149] "The Penny Arcade," *The Billboard,* March 15, 1947.

[150] *Ibid*, and *Boyd's Directory*, Philadelphia, 1908.

[151] *U.S. Patent Index*,1876-1929; *The Lakeside Annual Directory of the City of Chicago,* 1878-1929, Chicago Public Library.

[152] Frank S. Chance, of Indianapolis, Indiana, *Picture-Displaying Device*, Applied: April 15, 1897; U.S. Patent No. 591,452, October 12, 1897.

[153] Catalog, R.J. White, Chicago Ridge, Illinois, circa 1903. Robert Rosenberger, Cincinnati, Ohio, Collection.

[154] Morris Borsodi, of Cincinnati, Ohio, Assignor to The Leo Canda Company, of Same Place, *Design For a Picture Exhibiting Cabinet,* Applied: July 26, 1900; U.S. Design Patent DE33,267, September 25, 1900.

[155] Morris Borsodi, of New York, N.Y., *Design for a stand for Automatic Vibrating Machines*, Applied: May 17, 1905; U.S. Design Patent DE37,487, July 11, 1905.

THE MILLS NOVELTY COMPANY

The Chicago based manufacturing giant that was destined to become the largest coin machine producer in the world didn't start out as an arcade machine maker. When the Mills Novelty Company was created on paper on Thursday, June 24, 1897, by a name change for the old M.B.M. Cigar Vending Machine Company — a young Herbert S. Mills, then the tender age of 26 and already an experienced vending machine operator, had just bought controlling interest in his father Mortimer B. Mills' coin machine manufacturing company — its primary product was coin-operated automatic payout slot machines and cigar venders sold direct to cigar counters and saloons. In the works (actually, in Mortimer's basement at home) was a revolutionary all-mechanical floor model slot machine that promised to overcome the many operating problems of the touchy electrical machines made by Berger in Chicago; Specialty Manufacturing Company in Kalamazoo, Michigan; Rosenfield in New York; Marshfield in Minneapolis, Minnesota and elsewhere in the Midwest. Herb Mills gave it the name OWL (because it was so "smart") and brought the machine out at the end of 1897. There had never been another success story like it. The machine was produced in the tens of thousands, with the OWL symbol becoming as well known as the name Mills (better, in fact, as the OWL name and machine were copied by more coin machine producers than any slot machine before or since) to the point where it was adopted as the Mills logotype. When the Mills Novelty line was expanded into athletic test machines two years later — at the time the line was exploding in every direction with over 40 models of various types produced — to make further use of a good thing the OWL name was picked up once again to add recognition to a conventional lifter based on the original Percival Everitt idea, already a dozen years old. It wasn't the newness of the idea that would make the Mills OWL LIFTER a moneymaking product; it was the rapidly growing firm's aggressive advertising and reach that had, in two short years, quickly made it the fastest growing coin machine producer in the country. Above all else, Herbert S. Mills was a marketing man (he wrote his own company ads and catalog selling copy) and not above profiting from the engineering work of others. In the early years Mills acquired the manufacturing rights — or just outright bought out the companies — for more machines than those he created in his own shops. By the end of 1899 Mills Novelty had done more consolidating and had a broader line than any other firm in the business, with arcade machines staked out as an area of great potential.

While in his acquisition mode, "Hub" (his nickname) Mills had run across an interesting lung tester that had been produced by the Kern Brothers in Chicago since 1893. The outstanding feature of the device was a full-skirted and leggy dancing girl whose upraised



A dapper and derby hatted Herbert S. Mills visits the Louisiana Purchase Exposition at St. Louis in the summer of 1904, photographed there by his wife Leona. Mills was checking out the progress of a facility that did much to popularize arcade machines. Courtesy Mrs. George E. Woods (Marie Mills).

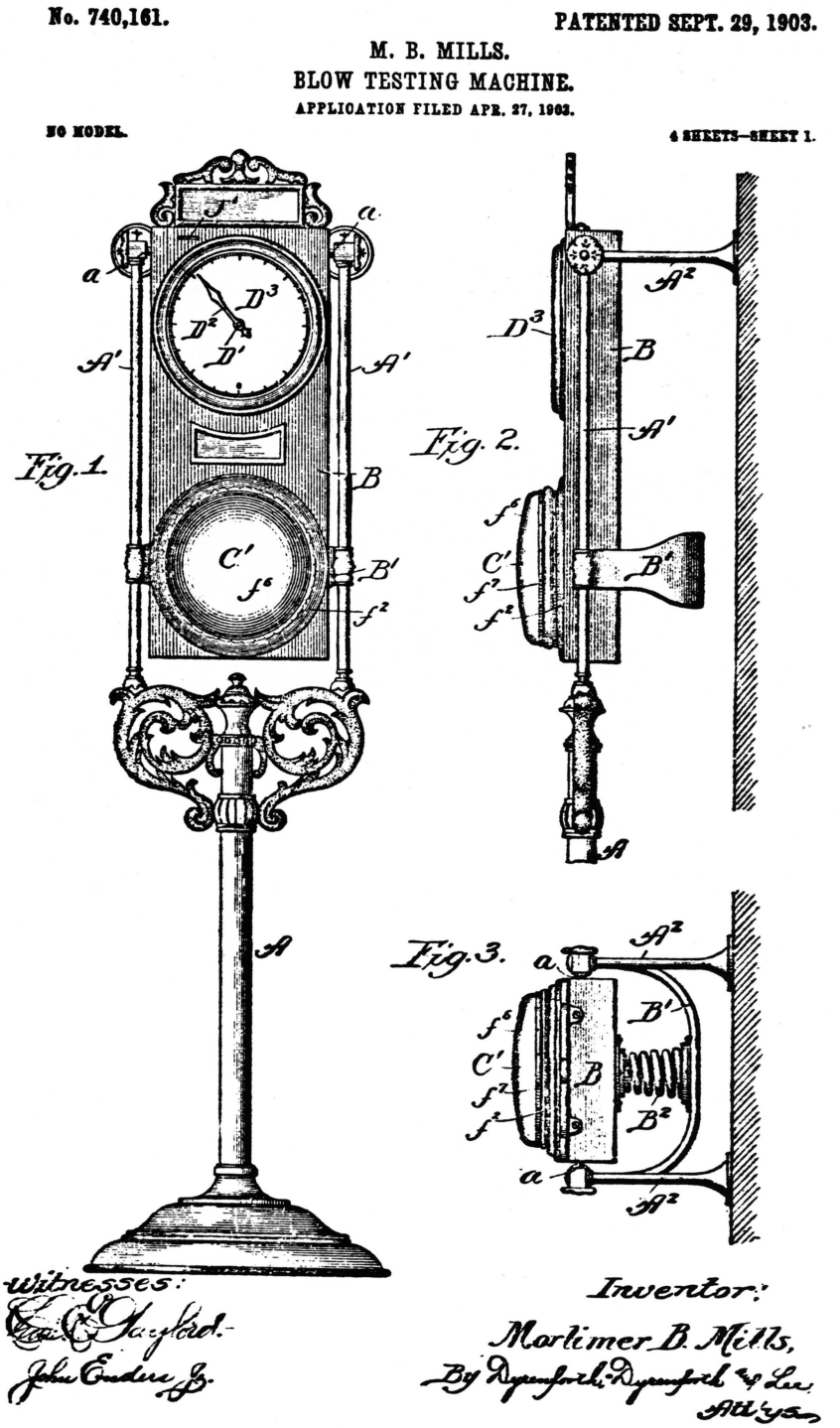


By definition a resort is a place where people frequently go for rest and relaxation, so Harry E. Corbett's saloon in San Francisco qualifies for the title. The recreation part is supplied by a wall full of Mills arcade machines including, left to right; NEW LIFTING MACHINE (February 1902), AUTO STEREOSCOPE (1904), BAG PUNCHING MACHINE (December 1903), IMPERIAL ELECTRIC "Girl" (1902), EMBLEM EMBOSSING MACHINE (February 1904), and SEARCHLIGHT GRIP AND LUNG TESTER (December 1903). The illustration is in a Mills 1904 direct mail flyer. Bueschel Collection.

kicking leg lifted higher and higher the harder the player blew. Mills applied the idea to a shocker which he simply called his ELECTRIC SHOCK machine, bringing it out in December, 1899, the year that ragtime was born and the first of the Scott Joplin rags was published in Sedalia, Missouri. The next month Mills Novelty had their first illustrated song machine, a combination ear tube phonograph and peep show in a complicated cabinet called the Mills PHONO-ARTOSCOPE. At the time Mills Novelty had both their Chicago plant and an acquired plant (formerly the National Manufacturing Company) in New York City and their major sales office at 1013 Grand Street in Hoboken, New Jersey, right across the river from Manhattan in order to gain a commanding position in what was then the largest machine market. The Hoboken office was managed by Herb's older brother Frank. Not content to bask in his brother's shadow, by spring 1900 Frank had renamed the office the F.W. Mills Manufacturing Company, claiming to be the producer of the PHONO-ARTOSCOPE and other Mills Novelty machines. Frank Mills did have access to local foundries and shops, as well as his brother's facilities, and proceeded to produce a number of unique machines of his own, including a peep show called TED SLOAN and three athletic test machines for saloon and bartop use called THE KNOCKER, THE BOOSTER and YOUNG CORBETT. In spite of the originality, the most successful F.W. Mills machine remained the Mills Novelty ELECTRIC SHOCK with the kicking lady. Frank Mills created a new case casting with "F.W. Mills MFg. Co." in the front and renamed the machine ZAZA after a currently popular musical show of the same name then playing at the Republic theatre. That's all it seemed to take to make the machine an even bigger hit in the summer of 1900 with the model and name reverting back to Mills Novelty when Frank Mills decided to go full time into the new arcade business in 1902.[156] Meanwhile, by the end of 1902, the Mills Novelty Company in Chicago had over 20 different arcade machines in their line, with almost a hundred three years later. It was the period of greatest growth for the firm with more arcade machine models being added than any other. New machine ideas and upgrades came rapidly from month to month, with a redesigned NEW OWL LIFTER in June, 1900; a Mills pick up of the ELECTRICITY IS LIFE machine in July, the same month the Mills-produced SAPHO QUARTOSCOPE came to market; a recall and redesign of the latter machine once the stage drama "Sapho" left Chicago and played New York (performances were curtailed and edited for immorality, with the lead part originally suggesting lesbianism) to come back again as the plainer named NEW QUARTOSCOPE in January, 1901 and once again as the IMPROVED QUARTOSCOPE in November; with the arcade standby, the BAG PUNCHING MACHINE, introduced in December, 1903. Starting in loft space in 1897 with two employees beyond his father and himself, "...from the year 1901 Mr. Mills introduced a great many new machines...which were a credit to his inventive genius and keen business sense. As the business grew, factory expansion grew likewise." In spite of a downturn in 1901, and a disastrous fire the next year, after a series of moves, "...the factory space had to be increased to 185,000 square feet of floor space."[157] In the process the Mills firm had become the leading industry exponent of arcade machines with its own captive arcade operations. From the moment in 1900 when Mills IMPERIAL shockers were placed on the "L" platform elevated railroad stations at Wabash and Madison streets over Chicago's loop business area to the Mills operation of the Mills Edisonia in the enormous Spectatorium building on the Pike at the St. Louis World's Fair in 1904, the growth in arcade machine products was exponential, carrying the line from saloons to public locations, and finally to dedicated arcades. It was the true genesis of the arcade business.

The Mills role was recognized for what was at the time, and the firm, and particularly "Hub" Mills, came in for an inordinate amount of media coverage. Mills was widely quoted, and the growth of the firm was recounted. By 1905, ""In the heart of Chicago's west side business district stands a five story factory building, equipped with modern

machinery and appliances, occupying 350,000 square feet of floor space and employing six hundred skilled operatives. The uninformed would scarcely believe that fifteen years ago its present occupant was a poor man standing at the mechanic's bench with crude tools in hand, carving out and putting together the first machine that was to place the name of H.S. Mills foremost among manufacturers of coin operated machines and make him largely responsible for the successful operation of a new industry — the Penny Arcade, sometimes known as Automatic Vaudeville — which is now sweeping the country with a wave of popularity never equalled in the field of amusement. Yet such is the case."[158] The reporter was from *The Billboard*. "We expected to see at the head of so large a business a man of at least fifty or sixty years, but to our surprise Mr. Mills appears to be not over thirty-five. After the usual formalities the conversation was opened by the writer: 'Mr. Mills, there appears to be great interest among our readers in Penny Arcades. It is generally understood that you have been largely instrumental in creating this demand and we naturally came to you for information that will further interest our readers.' 'Well,' said he, 'I shall be pleased to give you any information that will be of value to you and your readers, but there is so much to say I hardly know where to begin. Here is a booklet which we send out to our customers and which illustrates an describes the best way to operate a Penny Arcade. We have stated in our literature that the Penny Arcade is better patronized than the theatre. It's almost incredible; but, nevertheless, a fact. During the last few months there has been a decided boom in the arcade business, and while it may appear a little egotistical, we attribute it largely to the phenomenal success of the Mills Edisonia at the Louisiana Purchase Exposition at St. Louis. It is generally admitted that this was the most attractive and best paying feature on the Pike. This Automatic Vaudeville was originated and run by our company. Now, to illustrate the claim that the Penny Arcade is better patronized than the theatre: our books will show that the Mills Edisonia took in an average of $500 a day, some days running as high as $1,000, and was visited daily by 10,000 persons who spent an average of five cents each, and our place was run with five employees at a minimal



More often than not, the designer of the Mills Novelty Company arcade machines was Mortimer B. Mills, father of Herbert S. Mills, president of the firm (which he had bought from his father). This is Mortimer's patent for the PNEUMATIC PUNCH MACHINE of April 1903. U.S. Patent Office.

expense. Show me a theatre that has an average attendance for seven months of 10,000 persons daily. (And) the expense is greater. It requires from a dozen to twenty-five persons to operate a theatre, not to mention salaries of actors and the money it takes to fit up a theatre, which is enormous as compared with that of an arcade.' "[159]

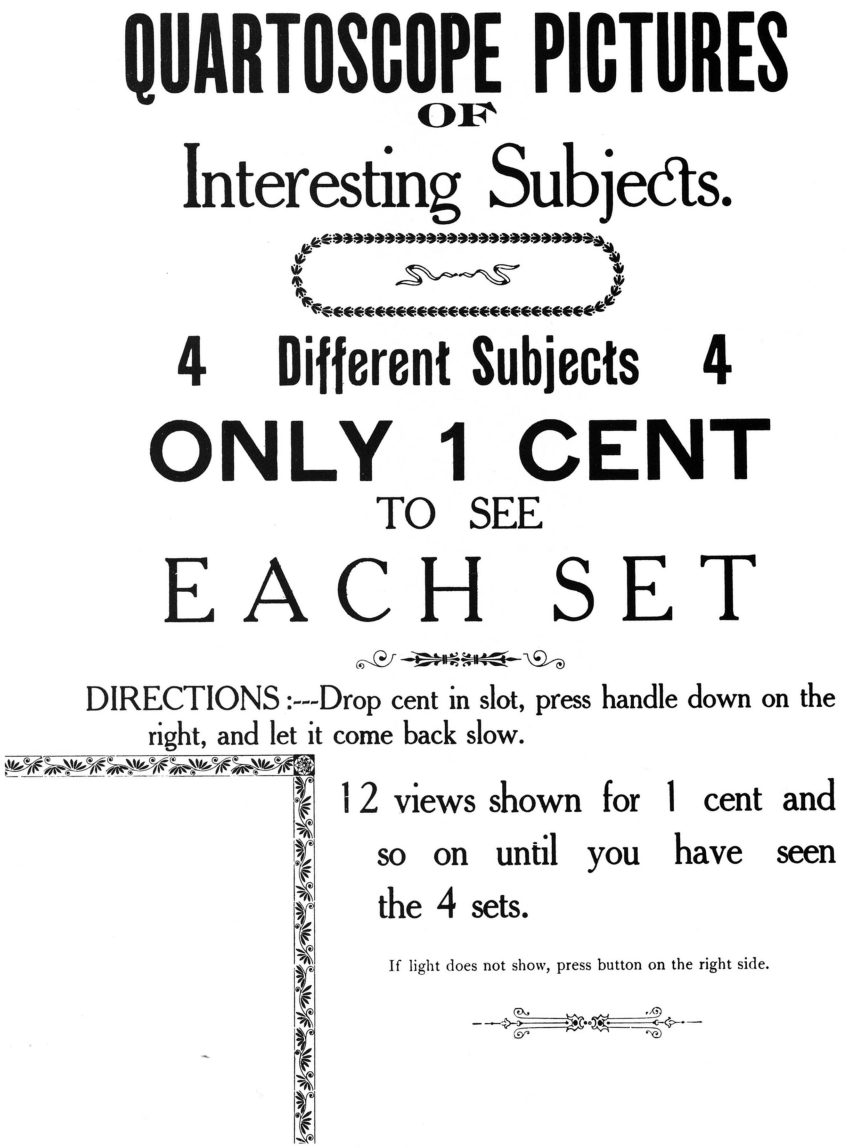
When the reporter asked why the arcades were so popular, "Mr. Mills replied with a smile: 'That question has



Quickly as popular as the SAPHO for saloon placement, the Mills Novelty IMPROVED QUARTOSCOPE of November 1902 — an advanced development of the original SAPHO — became both a saloon and dedicated arcade location favorite. This is the El Dorado Saloon in Sacramento, California, around 1902. The IMPROVED QUARTOSCOPE is on the left wall. A Clawson DICE MACHINE is on the bar at right. Bueschel Collection.

been a common one to us and it is easily answered. It is not the arcade room nor the machines that attract, but what they do. To illustrate this point we might say that McVicker's Theatre in Chicago is old, and therefore does not draw a crowd. It is not the building, not the stage, nor the fixtures that draw. In the language of Hamlet, The Play's The Thing, and, as you know, the play is changed frequently. So with the Penny Arcade. It is the same thing with our new ILLUSTRATED SONG MACHINE (Note: Disc model, February 1905) which is a combination of the phonograph and the well-known picture machine. The music record, the pictures and even the signs are changed every week. And so it is with a large number of other machines. Our CUPID'S POST OFFICE delivers a large variety of letters; our CONJURER, HOROSCOPE and other fortune tellers give numerous answers to questions. Athletic machines, such as our BAG PUNCHER, which has proved such a great money maker; lifting machines, electric shock, grip and lung testers, and many others, afford an opportunity for pleasant rivalry in tests of strength and skill; and so I might go on with other machines and show why each is popular.' "[160]

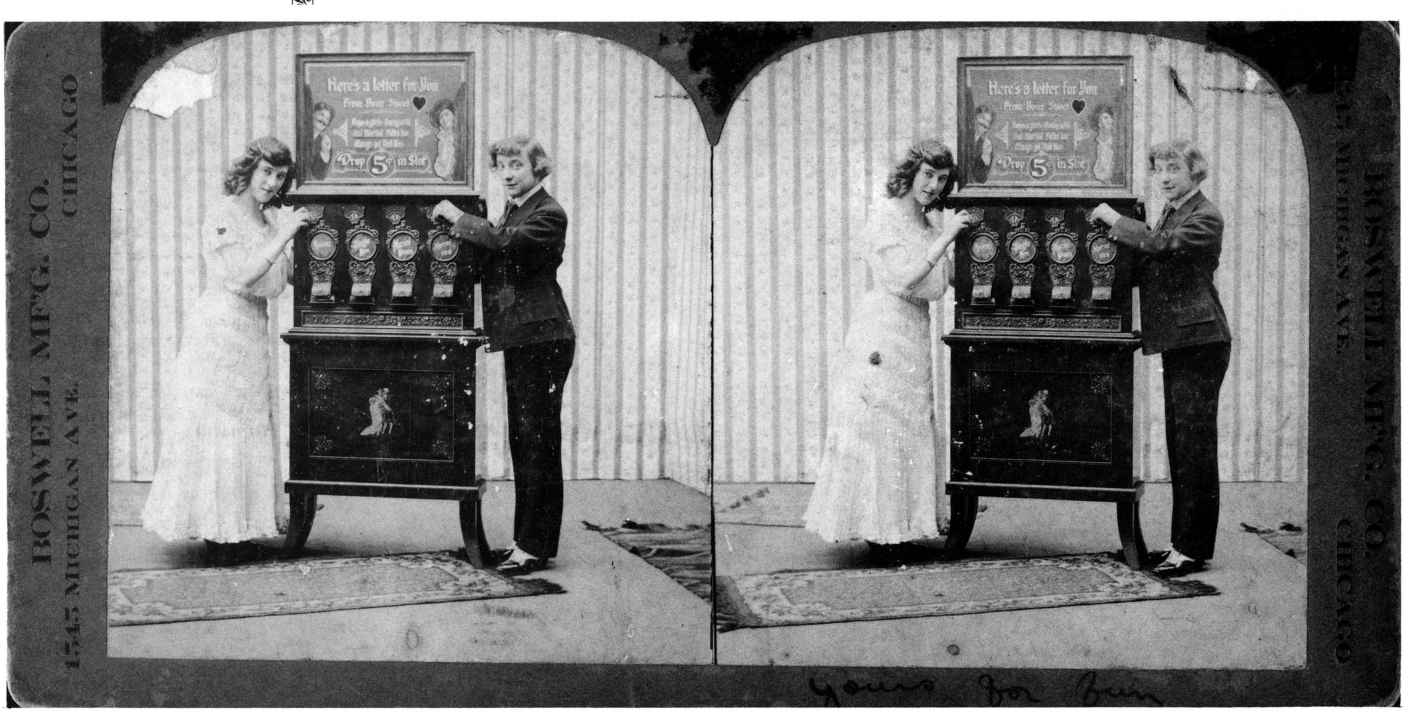
One of the major reasons for the Mills success, other than the outstanding marketing job behind the line, was the enduing quality of the Mills machines. That went right back to Mills R & D and production engineering. In Mill's words, "...we got so accustomed to talking among ourselves about a new machine during its experimental stage and before it is advertised that it almost seems as if everyone else ought to know about it. It is well known that an illustrated song on the stage is an extremely popular act. No argument is required in the statement that a phonograph has always been a winner. This is usually true of the picture machine — like our UNIT QUARTOSCOPE, or AUTO STEREOSCOPE. It was therefore easy to see that a combination of the phonograph and the picture machine in one would be a genuine hit. It was easier to see this than it was to build the machine. But I was determined it should be done and called to my aid our most skilled mechanics, and after weeks of work in our experimental



Left: Instruction card from the top marquee of the 1905 QUARTOSCOPE notes you see 12 views in each set for a penny, with 4 sets to be seen for a total of four cents. Later cards usually had lurid photographic views of what was to be seen inside. Bueschel Collection.

Bottom: Typical of coin machine people, Mills wasn't above self promotion. This stereo card, part of a QUARTOSCOPE presentation, features a young couple using a Mills HOROSCOPE (April 1905) machine. The horoscopes were available for Maidens, Single Men, Married Women and Married Men through four coin chutes. In an odd bit of casting, the young woman is putting a coin in "Maidens" while the young man is putting one in "Married Men." Bueschel Collection.

department we succeeded in not only overcoming the difficulties we at first encountered, but made a number of improvements"[161] So it was that the "hit syndrome" was just as prevalent in the industry when it began as it is today — even the same word, "hit" is used. And equally, the media was just as impressed then as it is now, with the Mills' interview ending with "from what we have seen of the automatic machine and the activity of the manufacturer in foreseeing the wants of the amusement public, we predict long life for the up-to-date Penny Arcade and

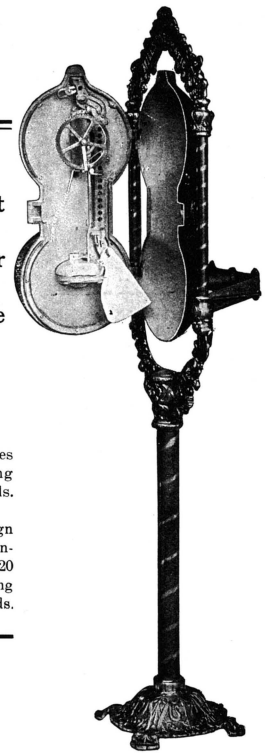


Mills Pneumatic Punching Machine

1905 Model



Front View, closed



Front View, opened

Small Investment

Little Labor

No Trouble

Great Returns

Size, 6 feet 2 inches high. Shipping weight, 175 pounds.

Boxed for foreign shipment: Dimensions, 48 x 24 x 20 inches. Shipping weight, 210 pounds.

Mills Emblem Embossing Machine

Delivers an Emblem with Your Name and Address



For Nickels

The play on this machine will never wear out.

The greatest legitimate money maker ever built.

Size, 3 feet, 8 inches high. Shipping weight, 200 lbs.

Boxed for foreign shipment: Dimensions, 50 x 24 x 26. Shipping weight, 230 pounds.

Mills Cupid Post Office



For Pennies

This Automatic Post Office delivers a love letter for a cent.

Size, 7 feet high. Shipping weight, 300 pounds.

Boxed for foreign shipment: Dimensions, 88 x 30 x 21 inches. Shipping weight, 400 pounds.

Mills Illustrated Song Machine

A New One **A 20th Century Wonder**



The only Phonograph that can be operated with regular house current

Does not wear out the records

Attach plug to electric light socket and the machine is ready to operate

A splendid combination of the Phonograph and the Picture Machine

No storage batteries. No cracking of Records

Mills improved Stylus and wire will play 600 pieces of music with one adjustment

An Automatic Phonograph using the disc record

A machine that can be successfully operated in all public places
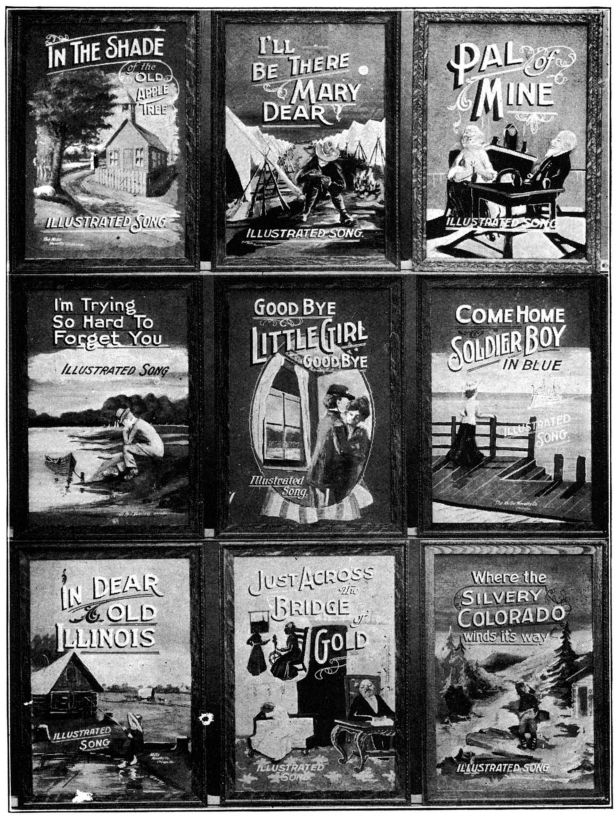
Can be made for 5 cents or 1 cent

Fully Covered by patents

Size, 49 x 19 x 20½ inches. Shipping weight, 227 pounds.

Boxed for foreign shipment: Dimensions, 65 x 29 x 30 inches. Weight, 285 pounds

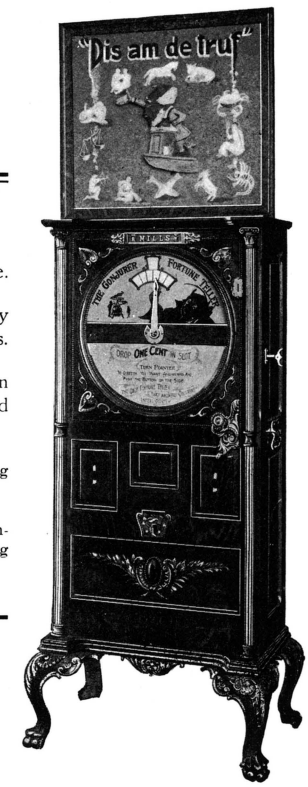
The More Attractive the Sign, the Stronger the Drawing Power



New Songs Illustrated as They Come Out
Ask For Our Sign and Music Bulletins

Mills Conjurer Fortune Teller

Answers Questions



For 5 cents or 1 cent

Very imposing and attractive.

Especially adapted for Penny Arcades and other public places.

With this machine you can turn the curiosity of the human mind into a stream of money.

Size, 4 feet, 8 inches high. Shipping weight, 235 pounds.

Boxed for foreign shipment: Dimensions, 65 x 33 x 22 inches. Shipping weight, 310 pounds.

Facing page and above: Bueschel Collection.

Mills Cashier's Desk and Stands



Cashier's Desk

No. 1 Pedestal. All iron, 36 inches high

No. 2 Pedestal. All wood, 35½ in. high

Mills Novelty thought of everything, even making and selling a cashier's desk for penny arcades. Mills also made and cataloged change makers. Bueschel Collection.

have no doubt that it will hereafter rank with the theatre as a popular form of amusement."[162] Not counting a few ups and downs, it has ever since.

[156] Carroll E. Vetterick, Editor, "Interview of the Month (Walter A. Tratsch)," *Automatic Age*, November, 1934.

[157] "Herbert Mills Is Dead," *The Automatic Age,* February, 1929.

[158] "Pat-Chats," *The Billboard*, April 29, 1905.

[159] *Ibid.*

[160] *Ibid.*

[161] *Ibid.*

[162] *Ibid.*

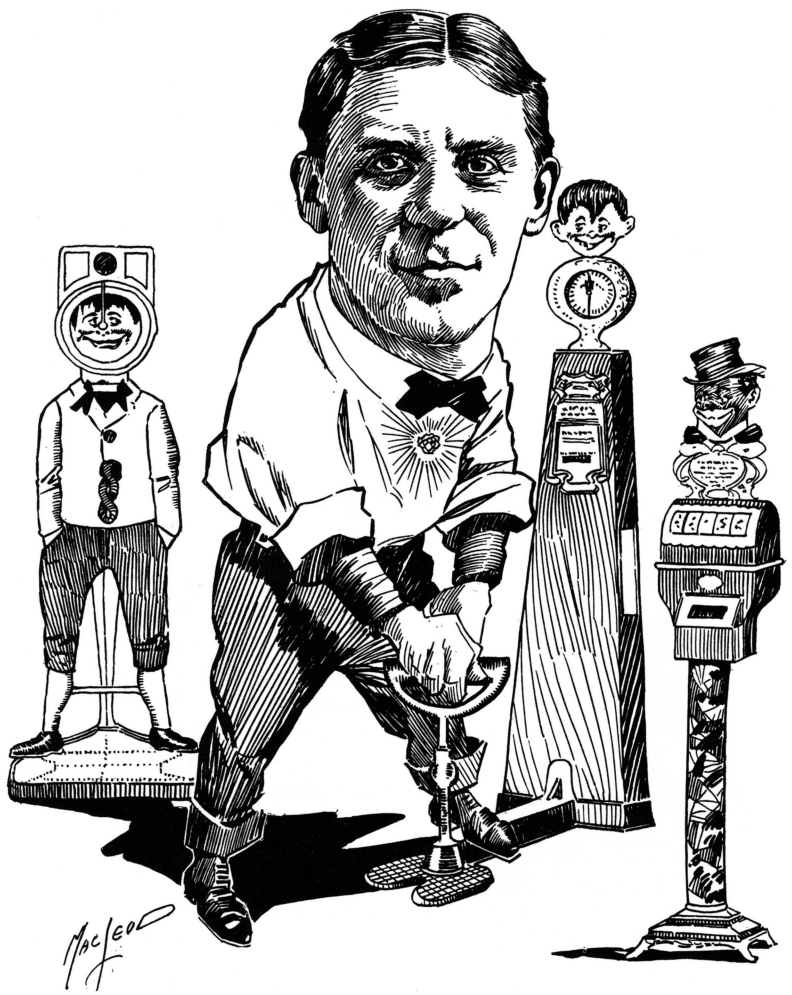
THE CAILLE BROTHERS COMPANY

That there was going to be a dominant industry leader in arcade machines there was little doubt. The industry had been going that way for some time. The wonder is that it was Mills, for there was another firm — actually, another family, and a group of firms — that had been making amusement coin machines longer, was better financed, had more experience in manufacturing and marketing and was going in precisely the same direction. From the beginning the Detroit based Caille brothers ran a tight second to Herbert S. Mills and his Mills Novelty Company in Chicago with the gap widening perceptively with each passing year. Yet it was the Cailles' that gave Mills the most challenging run for his money, all the more interesting as the families became close friends. The difference seems to have been one of aggressiveness. Mills swamped the market with product to meet every need two or three times over, while Caille met market needs with a shorter list of carefully chosen models. Finally, Mills frequently redesigned and upgraded their machines while the Cailles' stuck with what they had. As a consequence, even though Art Caille and his The Caille Company made an athletic test machine in 1897, two years before Mills got involved with the genre, the Cailles added nothing to the field until Adolph Caille's The Caille-Schiemer Company brought out a WALL PUNCHER in 1901. Soon thereafter, when the two brothers finally joined forces to create The Caille Brothers Company in August 1901, they entered the amusement machine market with the same kind of machine Mills did, a counter top shocker which they called SHOCKO, only it was two years after the Mills entry. From that point forward the two firms pursued an identical path, with Mills having the edge. Mills had two arcade machines in 1899 where the Cailles' had only one. Mills added six in 1890, the Cailles none, with Mills adding four in 1901 while the Cailles' leaped in with six, with the respective totals at 7 for the Cailles and 12 for Mills at the end of 1901. Two years later Mills had added 25 machines and the Cailles' 7, and by the end of 1905 the Mills line was four times that of Caille. Adding the Mills Edisonia operation at the St. Louis fair of 1904 and you had a rout for Mills machines. Except...the good looks and excellent engineering of the Caille machines made them a elegant alternative to the dominant Mills line, making Caille the loyal opposition. As is so often the case in a competitive society, there was plenty of room in the business for both lines. They kept each other honest and inventive.



The youngest and most promotionally minded of the Caille brothers, A. Arthur Caille — called Art — moved their firm into arcade machines. A salesman at heart, yet a clever inventor of machines, Art had his fingers in a lot of pies, including arcades in the Detroit area. He was the president of The Caille Brothers Company. Bueschel Collection.

The Caille brothers came by their manufacturing and marketing prowess through other lines, loosely related to coin machines. Youngest brother A. Arthur Caille, called Art, was the inventive visionary and promoter in the family. "Mr. Caille was born in Detroit on the first of April, 1867, and is the son of Joseph M. and Catherine (Moret) Caille," his father a Swiss born Alsatian who came to the United States in 1851 and worked as a cabinet maker.[163] "A. Arthur Caille was about ten years of age at the time of the family removal to Owasso and Saginaw (Michigan). In



JOHN H. KUNSKY
DETROIT
COIN OPERATING MACHINES

John H. Kunsky, former shop superintendent at Caille Bros. Co., was Art Caille's front man in arcade ventures and Detroit's first movie theatre. After he changed his name to John King, he became the guiding light for First National Pictures, Inc., later Paramount, in Hollywood. Bueschel Collection.

1883 (at age 16) he entered an apprenticeship at the woodworking trade (and) evinced that distinctive mechanical skill and inventive ability which have been the prime conservations of his remarkable success in the field of independent manufacturing. He was the inventor of the modern cash carrier system for use in mercantile establishments, having secured patents on his invention in 1889 (at age 22) and having instituted the manufacture of the same in the same year. His invention (a variation of the cash register, in which money was shot up to a cashier's cage by wire) met with ready approval and the Caille system was by him installed in leading stores in all sections of the Union. (After seeing early coin machines in his travels) in 1893 he brought out his first patents in the coin controlling slot machines, and in the placing of the same he was successful from the start."[164]

Older brother Adolph A. Caille, called Adolph, was born in Detroit almost exactly four years earlier, on April 2, 1863, so their birthdays were only a day apart, Art's coming first. Where Art thought of things, and then took off to sell them, Adolph stayed home, engineered the idea and made it produceable, creating the perfect team. The problem was, they didn't stay together. Both young men were enamored of coin machines and went off on their own to produce their respective ideas. Adolph stayed in Saginaw, finally moving to Detroit in 1899 with his The Caille-Schiemer Company to make his floor model gambling machines. Art, moving to Detroit in 1897, made vending, trade stimulator and chance machines at his The Caille Company. By 1900 the two brothers were trading models and ideas, and in August 1901 joined forces as The Caille Brothers Company in the facilities of Adolph's plant at 1427 Woodward Avenue. Their growth after that was spectacular. "A. Arthur Caille is president of The (Caille Brothers) Company, which is incorporated with a capital stock of $300,000. Mr. Caille is a young man, but, in common with his brother Adolph A. Caille, who is Vice-President, has had an experience in the business world that discounts his years by ten to one (Note: H. S. Mills was even younger. Born November 10, 1870, that made Mills 3 years and 7 months younger that Art Caille, and 4 more years younger that Adolph Caille). The novelties constantly introduced are solely the product of their own inventive ability, and it is no uncommon thing for one or the other of them to spend weeks on end in the pattern rooms, laboriously working out the complex details of a new idea. (They) have devoted their entire energy to the business until now they have the biggest enterprise of the kind in the world."[165] It may have been true, briefly, but that was a claim that "Hub" Mills (or any Chicago newspaper, for that matter) would have contested dearly. Yet The Caille Brothers Company arcade machine line soon matched items in the Mills line product for product. The Caille SHOCKO of 1901 — which was modified and improved and became the less shocking SIMPLEX of 1902 — faced off the Mills ELECTRIC SHOCK MACHINE of 1899 (called ZAZA by Frank Mills); the Caille LIFTING MACHINE of 1903 matched the OWL LIFTER of 1899 and its improved model of 1900; and the JEWEL of 1901 was the counterpart of the Mills SAPHO QUARTOSCOPE of 1900 and

The Caille Simplex.

Electric Medical Battery



CURRENT is controllable by persons using the machine so there are *no* "*shocks*." The electricity is gradually and increasingly administered, the indicator at front showing strength of current.

Switch for mild or strong current is placed in front. A musical electric chime rings while the machine is in use.

The "Simplex" is equipped with an automatic time limit.—Only a fair amount of electricity can be obtained for each coin inserted, thus the expense of operating is very slight and large profits are insured. Furnished complete with two batteries which will easily last for 3,500 operations or more.

The use of this machine is not confined to penny arcades. It is adatped to a wide variety of locations and invariably proves profitable wherever placed. Many have been sold to doctors and dentists, who place them in the reception room and thus make money while patients are waiting.



Also made in counter style as illustrated.

Finish: Richly nickeled metal case. Crystal dial, through which the mechanism can be seen. All parts highly finished.

Dimensions: Width 19 in. Depth 19 in. Height 72 in. Weight 95 lbs.

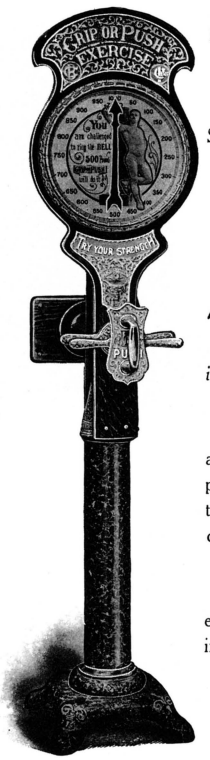
Telegraph or cable code—LIMITED

Dimensions: Width 14 in. Depth 8 in. Height 26 in. Weight 35 lbs. Counter Style.

Telegraph or cable code—LIMIT

33

The Caille Ajax Push and Double Grip.



Here is One of Our Latest. A Highly Attractive, Strong, Durable, Strength-Testing Machine.

Simply coins money all the time.

How it Operates.

THIS machine registers the strength of your hands by grip; also your *pushing* power up to 1,000 lbs.

A bell, operated by electric battery, rings at 500 lbs. and continues ringing until the plunger in front is pressed. This bell attracts the attention of all in the arcade to the machine and adds much to its earning capacity.

Solid iron column or pedestal, upper part enameled in colors, balance finely finished in imitation Mexican Onyx—nickel trimmings.

Elaborate sign, highly nickeled.

Dimensions: Width 19 in. Depth 22 in. Height 82 in. Weight 150 lbs. Boxed 215 lbs.

Above and left: Bueschel Collection.

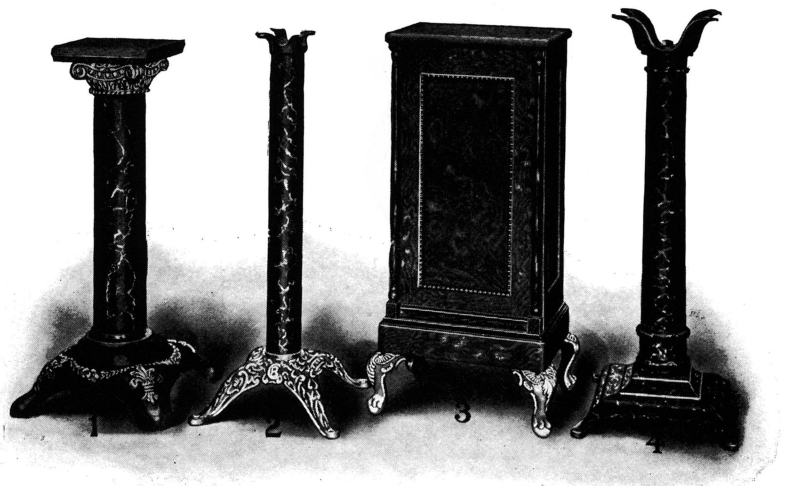
its improved NEW QUARTOSCOPE model of January 1901. "The bulk of the arcade machines were manufactured by Caille Bros., Detroit; the Mills Novelty Company, Chicago, and the William Rosenfield Company, New York. Basically the Penny Arcade devices were quite similar, but their manufacturers made attempts to give them a different appearance or a new claim. Electric shockers, for example, instead of merely inviting patrons to see who could absorb the most electricity, began to advertise that the machine was beneficial for headaches, neuralgia, rheumatism and all nervous disorders!"[166]

The Cailles also began to follow in the marketing footsteps of Mills, or at least Art did, led into the new ventures by a former shophand who became a new partner. "John H. Kunsky...also mechanically inclined...was at the time of the opening of the Caille factory, engaged to superintend the construction of the machines but soon learning of the profits to be realized from their operation, left the company and started out for himself. His wonderful success came to the attention of Mr. Caille and when the Penny Arcade business began to show signs of prosperity a partnership was quickly formed and several arcades opened which proved to be very profitable to both."[167] In 1905, Kunsky heard that the Pittsburgh Calcium Light Company had opened a motion picture house in that city under Thomas Edison's patents. "Kunsky went to Pittsburgh and returned with an astonishing vision. He and (Art) Caille opened a 200-chair movie show in a store at 24 Monroe (Avenue) and called it THE CASINO."[168] It was Detroit's first movie theatre.

For all the excitement of a new venture, it was still the Penny Arcade business — Art Caille liked to call it Penny Vaudeville — that made the real money. "Probably few realize the magnitude of the coin-in-the-slot amusement machine business in this country. When one stops to consider, however, how frequently these machines are seen in public places, it must be evident that they fill a public demand for amusement that is not met in any other way, and must be a source of profit to their owners. This branch of the amusement business cannot fail to be of interest to all managers of electric railway parks and pleasure resorts, because it offers a chance for the company operating the park to realize a good profit on its operation as well as making the park more attractive. In this way these amusement machines are unlike many other park attractions which have to be operated and maintained for the sake of the induced travel."[169]

The Caille Pedestals.

WE have many calls for extra pedestals and our four styles shown on this page will fill requirements for almost any purpose.



Style No. 1 is made up of cast iron base and top with large column having massive gold cap. Height 36 in. Weight 40 lbs.

Style No. 2 is of cast iron base and top, with cold rolled steel column. Height 36 in. Weight 32 lbs.

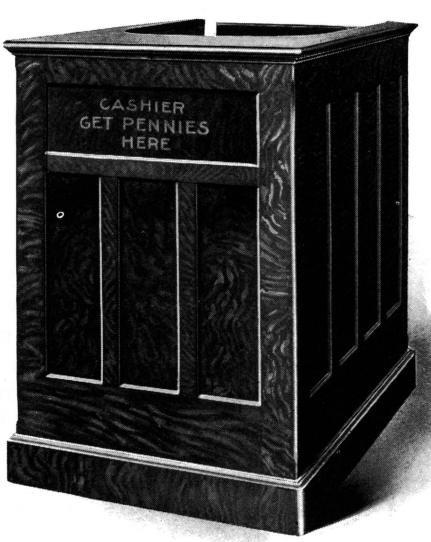
Style No. 3 is of quartered oak, 15 inches in width and 10 inches in depth. Height 37 in. Weight 35 lbs.

Style No. 4 is made entirely of cast iron and is made to resist rough usage, and is such as will be required for grip machines, etc. Height 40 in. Weight 65 lbs.

Cashier's Desk

Quartered oak, highly finished. Platform inside to elevate the cashier. Money drawer with lock. Just right for "Exhibits" or other public use.

Width 30 inches. Depth 45 in. Height 45 in.



52

Like Mills Novelty, Caille Bros. touched all the bases and offered a cashier's desk and machine pedestals for an arcade operation. Caille also had change makers. Bueschel Collection.

The Caille "Auto-Muto" Picture Machine.



Four Machines in One—12 Views Shown for 1 Cent.

We do not recommend this machine for arcade use, although it may be used in such places. It is best adapted for Public Locations, Saloons, Billiard Parlors, etc.

For Penny Arcades you are referred to the "Cail-o-scope," page 8.

FROM the start the Auto-Muto Picture Machine has been popular—and justly so because it is the best machine of its class ever produced.

Contains 48 views—4 sets of 12 each—which are shown plainly under electric light and through powerful magnifying lenses.

For operating, one coin is required for each set of views.

Mechanism is strong and simple. All frail or delicate parts eliminated—does not bend or mutilate the coin played and is comparatively noiseless.

Furnished with battery lights and wired for connection with street lighting circuit.

Please specify which is to be used.

Finish: Highly polished quartered oak cabinet, with neat nickel trimmings and attractive top sign.

Dimensions: Width 22 in. Depth 20 in. Height of cabinet 56 in. Weight 110 lbs. Boxed 160 lbs.

Views 12 to set, $1.00. If wired for battery light, $2.50 extra.

Telegraph or cable code—AUTO

Bueschel Collection.

The Caille "Scope-o-Phone."

A New Illustrated Song Machine.



Size: Height, with frame, 75 inches; without frame, 49 inches. Base 18x24 inches. Weight:—Net, 120 lbs; Gross, 190 lbs. Packed in one case measuring 24x28x52 inches.

Equipment: Rubber hearing tubes, with ear cups. Model "A" Reproducer, of our own approved design. Slot opening for U. S. cent. Quartered Oak Cabinet; highly polished golden oak finish. Beveled French Plate glass exposing Cail-o-phone Talking Machine. Improved Lens Holder allowing the lens to be removed, in a second's time, for cleaning purposes. Large money box under separate lock; Sign, Record, and Set of Views; Direct current motor of 110 volts.

Options: Coin slot for any other coin than the U. S. cent, without extra charge; Alternating current 110 volts, 60 cycles. Spiral metal hearing tubes, in place of rubber, at $2.50 additional. Direct Motor of any voltage up to 220, and Alternating of same voltage in any number of cycles.

This Machine is a decided departure from coin slot Phonographs, and is conceded to be the finest device of its kind which has ever been attempted. Mechanically, it is perfect, and in appearance, there is nothing as handsome as the Caille "SCOPE-O-PHONE." The construction is simple, and any one with an ordinary knowledge of machines would be able to do the adjusting which is required to keep the machine in perfect condition. There is a small adjusting device, which insures the appearance of the pictures at the proper time to correspond with the records. The entire make-up of this apparatus is intended for severe public use, and we fully guarantee every detail of its construction and mechanical workings.

Telegraph or cable code—SING

7

Bueschel Collection.

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163 "A. Arthur Caille," *Compendium of History and Biography Detroit and Wayne County*, Henry Taylor & Company, Chicago, 1909.

164 *Ibid.*

165 "Detroit Makes Coin Machines for Whole World," *The Detroit News-Tribune*, Sunday, March 27, 1904.

166 "The Penny Arcade," *The Billboard*, March 27, 1904.

167 "Originators of Reversal Vaudeville and Pioneers of the Motion Picture World," (no source or date). Margaret Caille (family) scrapbook, Detroit, Michigan, November 7, 1973.

168 "Ran Penny Arcade to Movie Empire," *Ibid.*

169 "Slot Machines For Pleasure Resorts," *Street Railway Journal*, April 29, 1905.

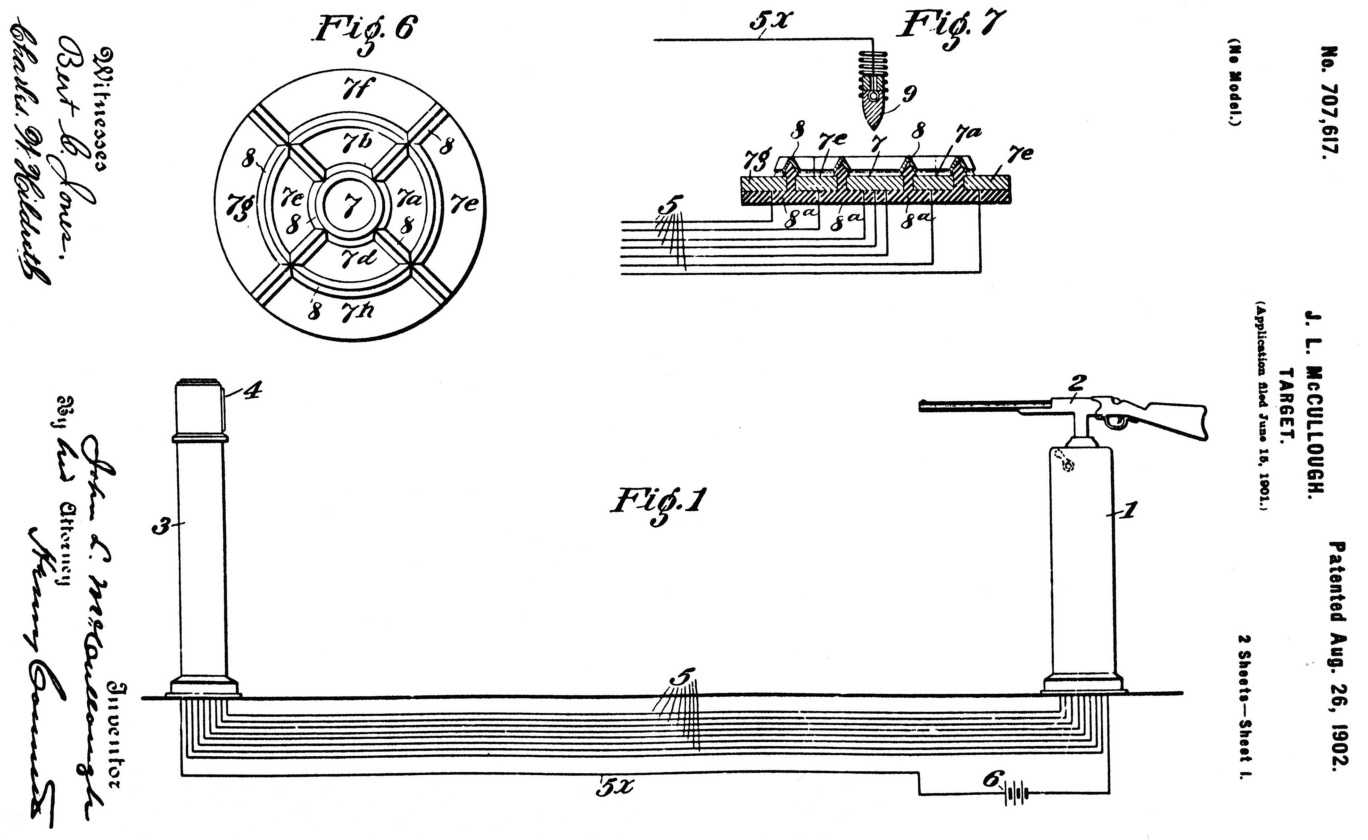
NEW NAMES, SAME GAMES

It's indigenous to the coin machine business: If something works well and turns a good buck for its producer make one for yourself. Copying, reproducing, honoring or outright stealing — no matter what you call it — has been with the industry since the first coin tripped a release mechanism to provide a thrill or a product. Patent battles came and went, but the copycatting endured. It still does. But when a new location success is on the climb it almost doesn't matter. The extra production is often needed to fill the pipelines, and lucrative careers and successful firms have been built on the backs of others by making duplicates or almost-the-same copies of successful machines.

When the Penny Arcade boom blew wide open in 1903 and 1904 there was no absence of copycat makers, and where they didn't exist new ones were formed. The popularity of the product was such that few Americans by 1904 hadn't seen the machines somewhere, whereas a large portion of the city population had actually gone into an arcade and could describe the wonders of the new amusement with authority. What they couldn't describe was who made what. Where the names of Edison and American Mutoscope were indelibly etched into the psyche of the public at large, the machines that came afterward didn't share this knowledge of source. To the user a lifter was a lifter, a puncher a puncher, and any picture machine was probably a MUTOSCOPE. If the public didn't care, why should the oper-



A sure fire hit used by the coin machine business to this day, a pretty lady demonstrating the maker's machine. The TIROGRAPH of 1904 was made in Chicago. Handle at center right sets up the target and arms the gun for play once a nickel is dropped in the coin chute on the right corner post. Courtesy Rick Crandall.

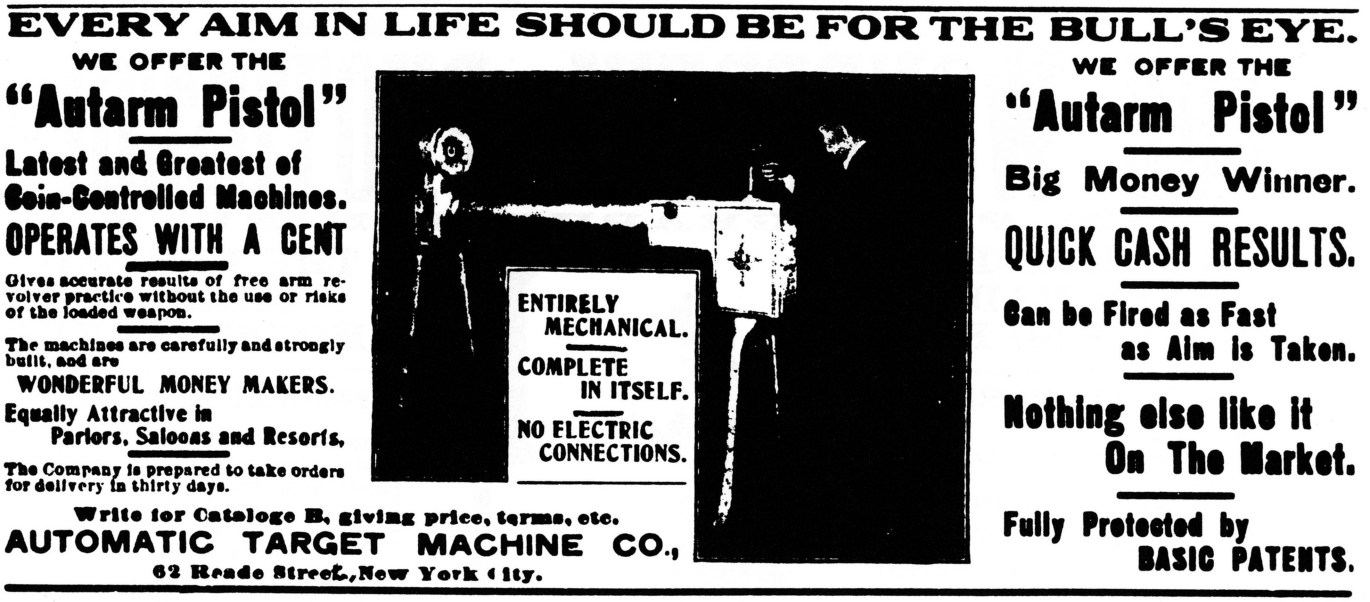


One of the most enduring and proficient producers of arcade games, The Automatic Target Machine Company of New York City made at least 10 variations of their AUTOMATIC TARGET in the decade between 1896 and 1905. This is the AUTARM ELECTRIC RIFLE version of June 1901. U.S. Patent Office.

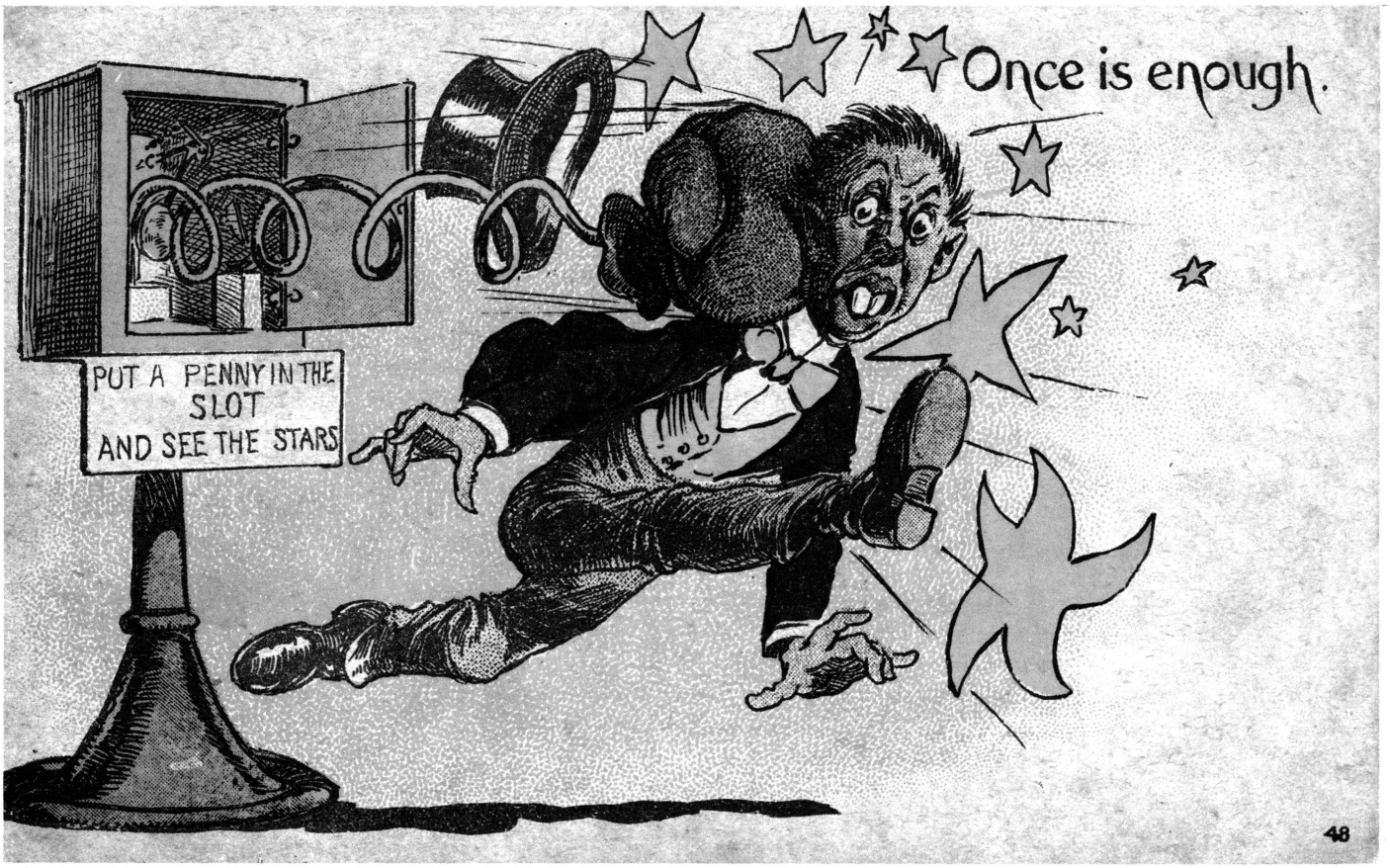
ator (a business perception that plagues the coin machine industry to the present day)? And that left the door wide open to anybody making anything, and put salesmanship on the same level as a reputation.

There were some original ideas being advanced — the clever shooting games of the Automatic Target Machine Company of New York City made between 1896 and 1905 and the highly promoted PHOTOSCOPE of 1903, were notable among them — but by and large the early 1900s was a parroting period once you got past Mills, Caille, Rosenfield and Roovers. The copycat producers even had long lines of machines, with a rarified few surviving the years to become established coin machine producers. The National Novelty Company, a coin-op scale maker located in Minneapolis, was an early copycat convert. Their WALL PUNCHER of late 1899 was remindful of the Luthor D. Haskell punchers made in Massachusetts a few years earlier. National's COMBINATION STRENGTH TESTER of 1901 was regarded as unique, but similar to earlier Lighton models, earning its place as an arcade standard and winning major distribution, such as the renowned Peter Bacigalupi in San Francisco. National's neighbor and major competitor, the Marshfield Novelty Company, also of Minneapolis, starting out as an electrical coin-op gambling machine producer, caught the fad and duplicated the National Novelty arcade line in 1902. R.J. White Company of Chicago, the 1902 receiver of the Berger firm after it went bankrupt, made the strongest bid for second supplier with its ELECTRICIAN shocker, a Colby copy; CHALLENGE PUNCHING MACHINE, a close relative to the Mills puncher; NEW PUNCHING MACHINE, another Mills similarity; NEW LIFTING MACHINE that looks like the Mills OWL LIFTER and the unabashedly name-lifted ZAZA of July 1903, a virtual duplicate of the F. W. Mills ZAZA of three years earlier. Even the White SAPHO looked the same as the original. In 1905, when the company name changed to the White Manufacturing Company located in Chicago Ridge, Illinois (part of the plant is still standing as of this writing), most of these replicated models were picked up, with new ones added.

Other producers were just as blatant. The Cowper Manufacturing Company in Chicago, another electric coin-op gambling machine maker, a class of machine all but blown away by the new all-mechanical Mills OWL and Caille PUCK machines of the turn of the Century, picked up on the arcade machines, making puncher, lift, grip and strength test machines that matched those made by National, Marshfield and Midland. Rogers Manufacturing Company (later to be Rogers Specialty Company) in New York City went farther, making a puncher, peep show, LOVERS POST OFFICE card reader — copied after the original Cosmopolitan Novelty Compa-



The Automatic Target Machine Company AUTARM PISTOL was promoted as "Equally attractive in parlors, saloon and resorts." This ad ran in the February 18, 1905 The Billboard.



By the early 1900's, amusement coin machines were so well known they became the target of topical humor. This comic postcard is typical, saying, "Put a penny in the slot and see the stars."

ny machine of a year earlier, also copied by Mills and Caille — a name plate machine and fortune teller. The most popular Rogers model was the JEFFRIES WOODEN PUNCHING MACHINE, a Haskell copy with a topical name, for the young California giant James J. Jeffries had just earned and reconfirmed his heavyweight championship by beating Bob Fitzsimmons twice and eliminating challenger Tom Sharkey in a November 3, 1899 bout at

READY AT LAST.

THE WONDERFUL PHOTOSCOPE

SIX PHOTOGRAPHS A MINUTE.

NO COIN MACHINE EVER MADE PROFITS SO FAST

THE NEWEST--- BIGGEST MONEY MAKER



HOW IT WORKS

—Drop nickel
—Take push button in hand — be seated
—Centre your face in the mirror
—Press button—sit still until bell rings—replace button on hook
—Take finished photo from delivery tray

THAT'S ALL.

Simple and Quick.
6 a Minute.

POSITIVELY SELF-OPERATING

Photoscope takes pictures continuously---fast as persons can get into position in front of it---Photoscope delivers a perfect photo neatly framed and finished---permanent value for every nickel---Photoscope's novelty and *usefulness* never wear out ---No repairs---Photoscope mechanism is sturdy and simple---Photoscope supplies are cheap---can be shipped anywhere---keep any length of time and in any climate.

EXCLUSIVE PATENTS—SOLE MANUFACTURERS,
THE PHOTOSCOPE CO., 114 West 32d St., N. Y. City.

WRITE QUICK FOR
PHOTOSCOPE BOOKLET AND FOR OUR OFFER
OR CALL AND SEE THE
PHOTOSCOPE TAKE SIX NICKELS AND MAKE SIX PHOTOS EVERY MINUTE.
CALL OR WRITE AT ONCE,
FIRST SUPPLY LIMITED.

Two-thirds of every nickel taken by the Photoscope IS CLEAR PROFIT.

PAYS FOR ITSELF IN TWO OR THREE BUSY WEEKS.
EASILY MOVED AND SHIPPED.
PHOTOSCOPE CABINET IS 31in. HIGH " 17in. SQUARE.

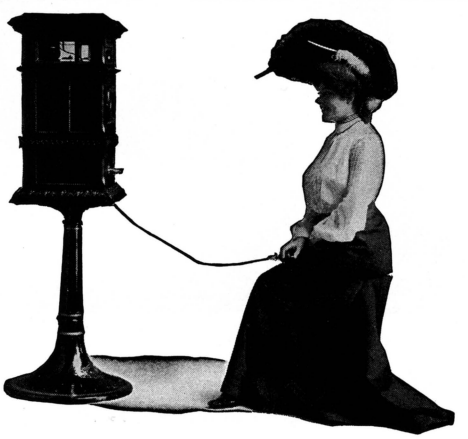
THE PHOTOSCOPE CO., 114 West 32d St., New York City.

THE PHOTOSCOPE

WILL BE ONE OF THE MOST INTERESTING AND NOVEL INVENTIONS
AT THE

World's Fair, St. Louis
1904

THE NEWEST
BIGGEST MONEY MAKER



The Exposition Management have endorsed and adopted the Photoscope as the only Perfect Self Operating Picture Taking Machine in the World, and have granted exclusive privileges for its Exhibition on the Fair Grounds, where 200 will be in operation.

NOTICE TO PURCHASERS.

The World's Fair Management, in adopting the Photoscope, stipulated that no Machine shall be in operation within 50 miles of St. Louis, previous to or during the Exposition, excepting those on the Exposition Grounds.

EXCLUSIVE PATENTS—SOLE MANUFACTURERS,
THE PHOTOSCOPE CO., 114 West 32d St., N. Y. City.

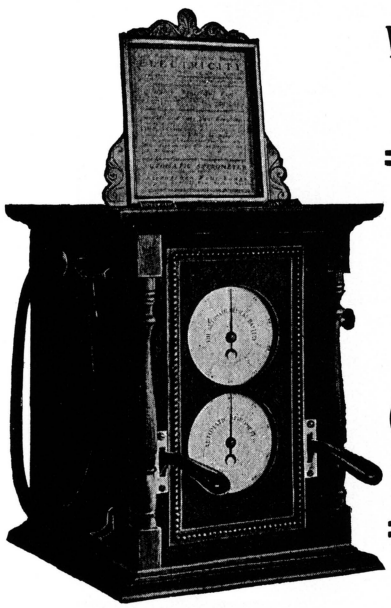
WRITE QUICK FOR
PHOTOSCOPE Booklet and For Our Offer
OR CALL AND SEE THE
PHOTOSCOPE Take Six Nickels and Make Six Photos Every Minute.
CALL or WRITE AT ONCE
FIRST SUPPLY LIMITED

St. Louis Office:
1001 NORTH VANDEVENDER AVE.
It will be in LIBERAL ARTS BUILDING at World's Fair Grounds, After the Opening of the Fair.

PAYS FOR ITSELF IN TWO OR THREE BUSY WEEKS
EASILY MOVED AND SHIPPED
PHOTOSCOPE Cabinet is 31 in. high by 17 in. square

THE PHOTOSCOPE CO., 114 WEST 32d STREET NEW YORK CITY.

Automatic Medical Battery and Lung Tester Combined



WONDERFUL PROFITS!

Great Catch in Drug, Cigar and Confectionery Stores

A Lung Tester expands the chest and strengthens the lungs, keeping the healthy in normal condition, preventing the weakening of the lungs and contraction of the chest. By dropping coin in slot machine is ready for action.

Here are two useful machines in one and sold for the same price that each would cost separate.

In ordering, state whether they are to be operated with nickel or penny.

Height, 16½ in. Width, 12½ in. Depth, 13 in.

Weight, boxed ready for shipment, 15 lbs.

These machines have been known to earn as high as **$5.00** per week. They are a never ending source of profit.

Send us **$1.00** and we will ship C. O. D., subject to examination and test.



Sure as a Mint You Simply Wind it Up and Take Out the Coin

Latest and best picture machine. Strictly modern and up to date and legitimate. Mahogany finish, fine enough for any parlor. Mechanism absolutely perfect in construction. Automatic in action.

The machine shows 15 very "catchy" views under electric light, as perfect and realistic as day. Every one who looks is pleased. Will run continuously for 12 hours.

Shipping weight, 200 lbs.

Send us $3.50 and we will ship C. O. D. for balance, subject to inspection and test.

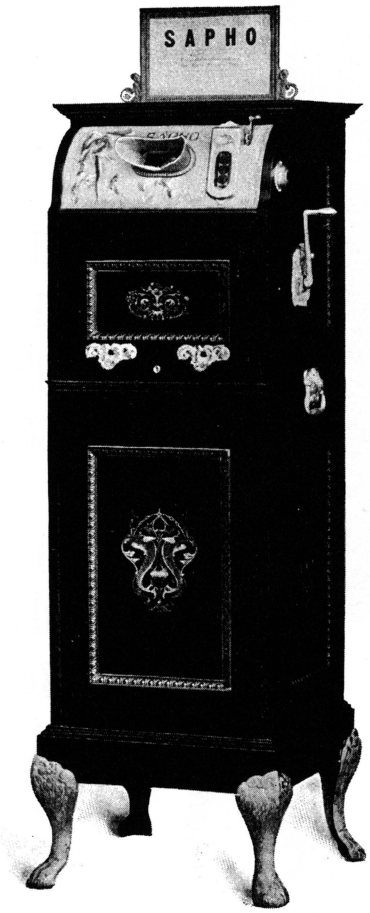
Machine is fully guaranteed. Every amusement parlor has at least six of these machines.

This page, next page: Four pick-up machines from a White Manufacturing Company mailer of January 1905 which shows a Colby copycat AUTOMATIC MEDICAL BATTERY AND LUNG TESTER, the Berger AUTOMATIC SAPHO and SAPHO "Quartoscope" style peep shows, and the venerable Helmeth Messmann to Midland to Enterprise Vending to R. J. White STRENGTH TEST MACHINE being made as the White IDEAL STRENGTH TESTER. The continued to be marketed later by the White Vending Company. Bueschel Collection.

Opposite page: Created by inventor Alfred Lenz of New York City, the PHOTOSCOPE first appeared at the Louisiana Purchase Exposition in St. Louis in 1904, promoting exclusive territories. After a run of success, Lenz sold the machine rights to M.S. Kline in Buffalo, New York, who continued with the device. New York Clipper, February 13 and March 26, 1904.

Coney Island (in the first fight filmed in motion under lights to be shown by Edison's PROJECTING KINETOSCOPE) between the two Fitzsimmons fights of 1899 and July 25, 1902. Through all this Peter Beetz of New York City, the inventor and producer of the early STRENGTH TEST and push-pull MUSCLE DEVELOPER machines of 1888, remained in the physical test and arcade machine business through his Automatic Novelty Company (which ultimately returned to its original Peter

"SAPHO" PICTURE MACHINE



A Beauty to Look at from Outside and Many Beauties to Look at on the Inside

Thousands in Use Paying Immense Profits

The "Sapho" is very attractive in style, shape and finish. The mechanism is perfect. 48 views, 12 being shown with each operation. Made to be operated with nickel or a penny.

The pictures are **"true to life"** and afford **"Royal"** entertainment. Views have been selected with unusual care and are pronounced **"Great"** by those who have seen them.

The case is fine mahogany finish, 58 in. high, 18 in. deep, 16 in. wide. Shipping weight, 230 lbs.

Shipped C. O. D. for balance on receipt of **$3.50** as evidence of good faith. These machines have been known to pay for themselves in thirty days and afford continuous income every day thereafter; all you have to do is to go around and "take your rake-off."

Ideal Strength Tester

BETTER THAN GOLD MINE STOCK
PAYS CASH DIVIDENDS DAILY



This Machine Operates with Electric Light Indicator.

Greatest Money Maker of the Age; Only good paying, legitimate slot machine made. It has no equal. Is useful, ornamental, beneficial and a **"Veritable Gold Mine."**

Why not get the latest? Lots of fun. Lots of amusement. Lots of excitement. Lots of Money. Earns its cost in one week. Order it now.

Machine is 10 inches deep, 12 inches wide and 5 feet 8 inches high. Net weight of machine and stand, 85 pounds; boxed, 100 pounds.

Contains 5 Different Features, Requiring a Penny or a Nickel to Try Each Feature.

Send us **$2.00** and we will ship C. O. D. for balance.

Beetz name).

The single most successful copycat producer, and one that survived to become a major factor in the coin machine business, was the Watling Manufacturing Company of Chicago. The Watling brothers John and Tom had sold candy in theatre lobbies in Cincinnati, placed scales and payout slots on location and, in the case of younger brother Tom, had sold fixed lottery tickets for a Kansas City entrepreneur before they settled in to become coin machine salesmen for the Chicago-based D.N. Schall And Company. Borrowing high interest money, they bought Schall out in December 1903 and suddenly found themselves in the slot machine manufacturing business with a dead line of old models. Anticipating the drop off, promoter Tom and older mechanically inclined brother John — an almost exact repeat of the situation that had led to the formation of The Caille Brothers Company in Detroit the year before — had made a grab for all of the arcade machines they could find, adding them to their product mix when the new firm opened its doors for business. Grabbing the arcade location at the White City amusement park in Chicago — just as Mills operated the Edisonia at the Louisiana Purchase Exposition in St. Louis and Caille and Kunsky were operating arcades in Detroit — the Watlings made themselves a factor in the business. But mostly they made other maker's machines. Of their 1903 line, the SAPHO PICTURE MACHINE was a nuts on duplicate of the original Sapho model; their PUNCHING MACHINE

The Greatest Come Back Machine in Existance

THE NEW ELECTRIC FUTURE SCOPE

Is an entirely NEW AMUSEMENT attraction.

It entertains old and young. Men women and children play it with equal pleasure. Has been played at Church Entertainments much to the amu-ement and profit of all parties. When a player drops a nickel in the cabinet it starts the mechanism to work, giving the player the day and date of their Future Marriage, also the character, wealth, occupation etc., of Future Wife or Husband, gives their Lucky Numbers, in fact gives the complete fortune in a true and amusing manner, and best of all gives each player a

A HANDSOME RING and A PHOTOGRAPH OF THEIR WIFE OR HUSBAND

Everybody leaves the "Future Scope" very much pleased with a fortune card hanging from their button hole, which serves as an advertisement for your "Future Scope."

Bringing everybody to play it you can make a year's wages in a s ort time. It is the most amusing novelty ever invented and the most handsome machine now on the market. It gets more money than any other machine of i's kind on the market. The earning power of this machine is from $20 00 to $50.00 per day. Get one of these latest machines and start to make the most money you ever made on so small an investment; you are sure to make from one to two hundred dollars per week with this new machine, it's just out, get one while their hot and get the money. Just think! Why, they get so much money! The date of marriage, fortune, photo, lucky numbers and a handsome ring all for 5 cents! We have ladies and gentlemen working them and all making the above sum. Why not you? They are a veritable gold mine. Get the latest and you are on the right road to wealth. **Do it now.** It is easily handled and carried from place to place, and easily worked by either ladies or gentlemen.

The Electric "Future Scope" is the best and latest attraction for street and county fairs, summer parks, picnic grounds, concerts, public gatherings, church bazaars, stree corners, husking bees, etc.

FUN FORTUNE FUN

Your fortune told Date of your marriage, Photo. of your future wife or husband, lucky numbers and a handsome ring all for 5 cents.



This is the greatest money getter of the age, and the prettiest machine now on the market.

How little the thinking few, think of those who do think; but this little machine makes them all think.

PRICE COMPLETE ~~$20.00~~ 15.00

The complete Electric Scope consists of Electric Scope, Pedestal, and 500 Envelopes containing Photos and Fortunes.

The Electric "Future Scope" is made of solid oak, highly finished; all signs are covered with celluloid and pretty metal frames as Electric light. An Electric bell which attracts attention of every one around, the p destal is made of steel and can be folded; it also has a ring case that holds four dozen rings; it also has a handsome col r picture on front of machine 8 x 11 and very attractive. We furnish fortunes, photos and rings for re loading your machine.

How to order Electric "Future Scopes:" By sending us $3.00 to cover cost of express charges and packing, we will send C. O. D. wtih the privilege of examination, the complete Electric Scope consisting of the "Future Scope" and 500 fortunes. Full direct ons with each machine. The 500 photos and fortunes bring $25.00 which pays for your "Scope" on your first order and gives you a net profit of $5 00. We furnish photos, fortunes and rings for reloading Electric Scopes at the following very low prices:

Fortunes per 1000.....~~70 to~~ 95 cents. Photos per 1000.....95 ~~to $1.90~~

Photos and Fortunes in envelopes .....~~$2.90 to $4.75~~ per 1000 4.50

There are four ways to work this machine, and get big money either way. Full direct ons will be sent with each machine.

Prices of Rings per gross as follows: Set Ring all color stones.....~~90cts.~~ 1.10 Wedding Rings ~~marked 18k.....$1.00~~ 1.20 Flash Rings, very handsome.....$5.00 Four & five stone sets all colors easily sell for 25 and 50 cts. each, samples 10cts. Some at $2.00, $3.00, $4.00, $4.50 and $4.75 make your wants known I can give you the best rings at lower prices than anyone else.

looked like a Mills; the FIVE IN ONE was a copy of the Helmuth Messman STRENGTH TESTER of late 1900; the COMBINATION GRIP AND LIFTING MACHINE could easily be mistaken for a Mills or National; and the WIZARD FORTUNE TELLER of 1905 looked so much like the Mills it could be mistaken for one even after close inspection. Other machines were at least more original, including the massive DOCTOR of May 1905, a vibrator made by Morris Borsodi of New York, the former chief designer of the Leo Canada Company in Cincinnati, and someone the Walting's probably knew from their Cincinnati days.

For all the copycat action in the industry, suggesting a new found business maturity that had not existed before, other new significant machine developments were taking place. A sidestep was the exploitation of the machines as an amusing approach to secret society membership — it seemed as it almost every American male belonged to a lodge of some sort, separated by religion, origins or income — in which gag versions of arcade machines were used in hazings and initiations. The Edmund De Moulin And Brother firm in Greenville, Illinois, was the leading supply house for such sophisticated (actually, cornball) stunts and did, in fact, develop and patent a dummy PATENT LUNG TESTER that blew flour all over the unsuspecting inductees' face while it exploded a 32-cal. blank cartridge once the blowing tube was used, not to mention a number of other dummy devices which they produced and sold.[170] With that, the gag arcade machine had moved into the main stream of American humor where it remained for another thirty years or more.

It was the straight line development of new machines specifically created for arcade or more spacious area locations that now began to capture the operator's attention. Cabinet boxed exhibitions and self-contained dials on pedestals were fine for the confined railroad sta-

Left: Almost a look-alike of the Enterprise Vending STRENGTH TEST MACHINE, the Charles G. Bissel & Company FUTURE SCOPE of 1905 is a fortune teller. Players got a vended future husband or wife card and a brass ring with a colored glass stone for a nickel. Bueschel Collection.

No. 692,251. Patented Feb. 4, 1902.

E. & U. S. DE MOULIN.

DUMMY LUNG TESTER.

(Application filed July 20, 1901.)

(No Model.) 2 Sheets—Sheet 1.

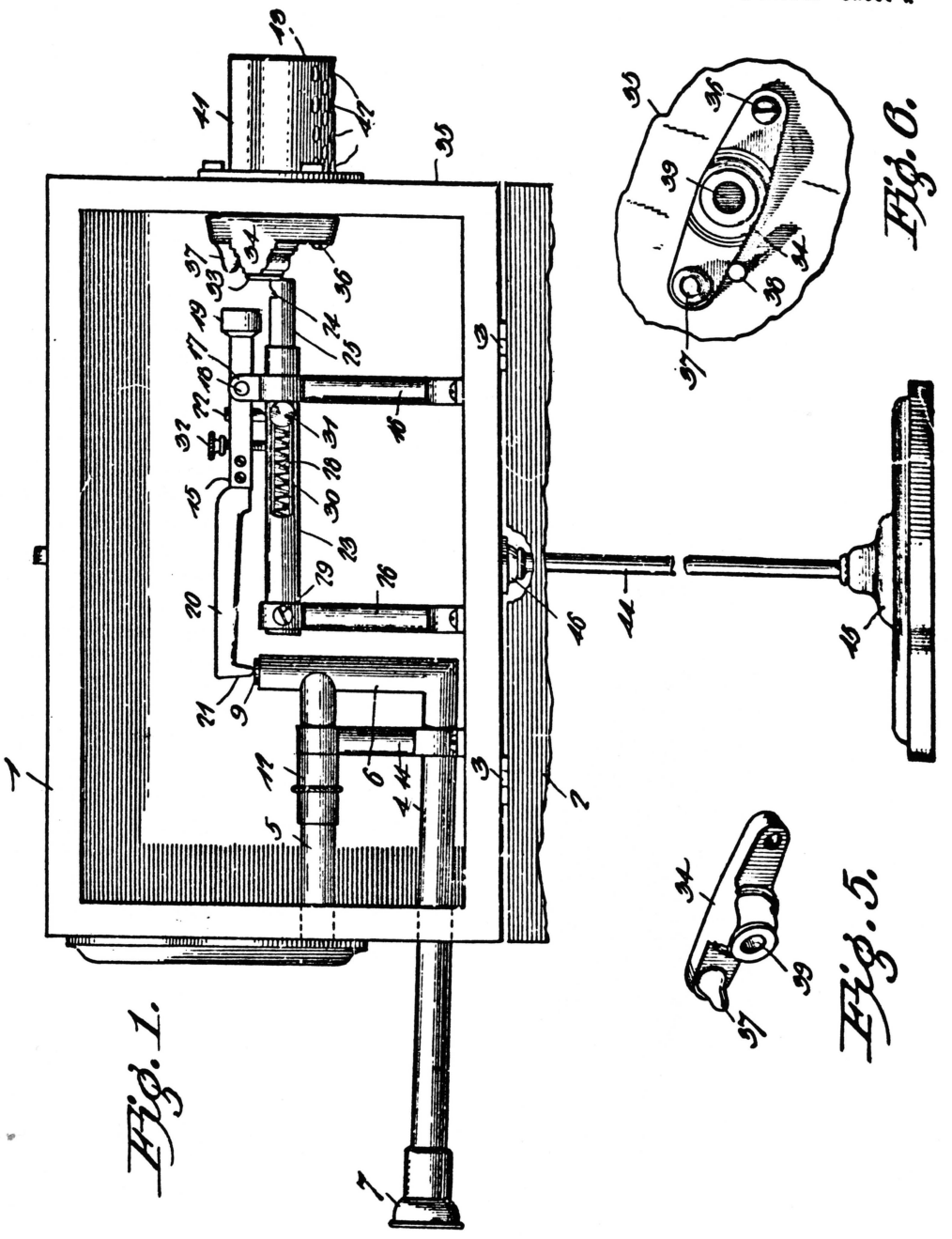


Fig. 1.

Fig. 6.

Fig. 5.

Witnesses

J. Frank Lawberwell.

T. J. Riley

Ed. De Moulin and
U. S. De Moulin, Inventors

by C. A. Snow & Co.

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

This page, opposite page: Edmund De Moulin and his brother Ulysses of the Ed. De Moulin & Bro. company of Greenville, Illinois, the leading national purveyor of lodge imitation specialties, took the arcade machine to its ultimate excess, making dummy comic versions. This is the patent on their PATENT LUNG TESTER of July 1901. It blew flour in the users face. U.S. Patent Office.

No. 692,251. Patented Feb. 4, 1902.

E. & U. S. DE MOULIN.

DUMMY LUNG TESTER.

(Application filed July 20, 1901.)

(No Model.) 2 Sheets—Sheet 2.

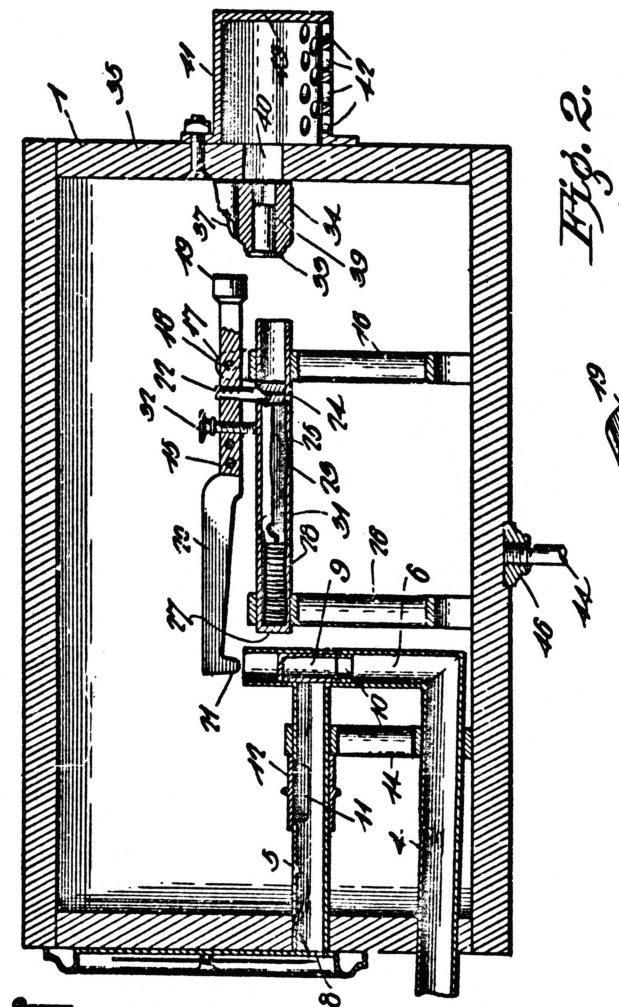


Fig. 2.

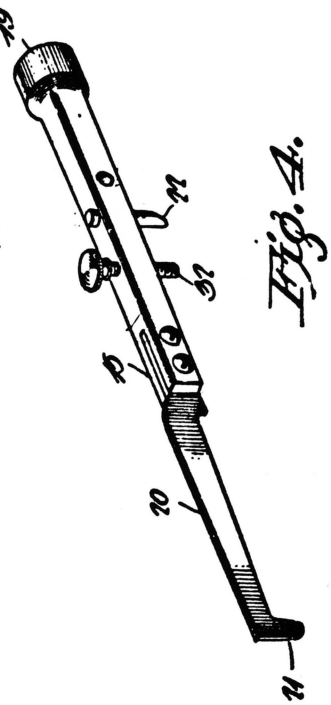


Fig. 4.

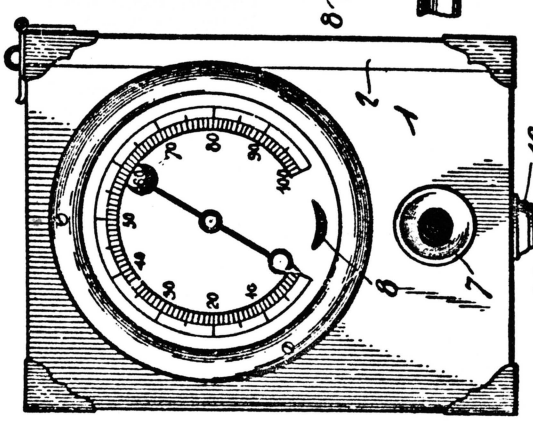


Fig. 3.

Witnesses

J. Frank Lowerwell.

T. J. Riley

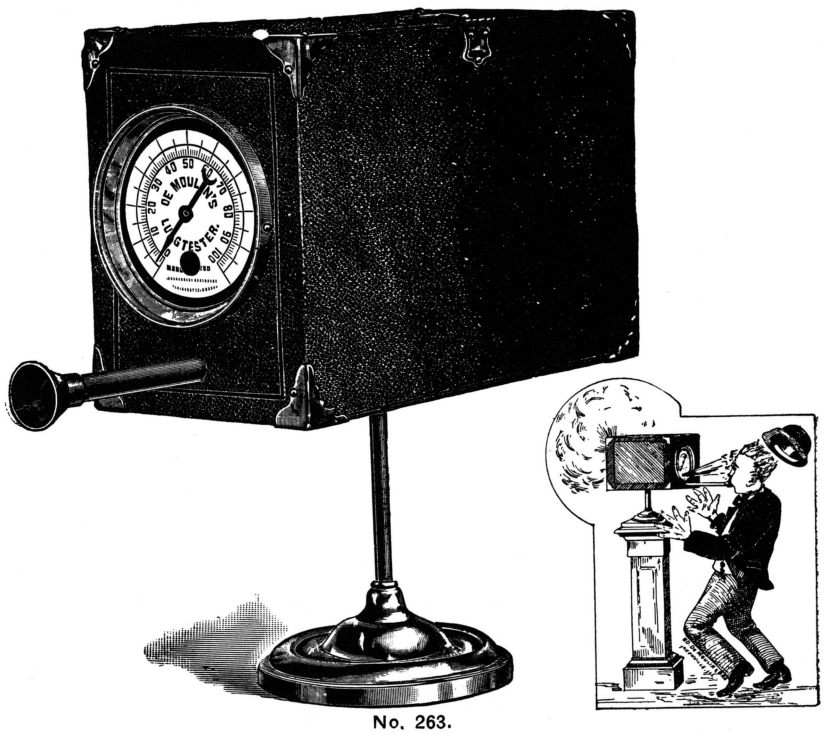
Ed. De Moulin and U. S. De Moulin, Inventors

by C. A. Snow & Co.

Attorneys

THE ROBBS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

DeMoulin's Patent Lung Tester.



No. 263.

263 This Lung Tester is nicely finished with a handsome leatherette covered case with nickel plated trimmings and base, presenting the appearance of a high-priced surgical instrument. It is fitted with a nickel plated mouthpiece, into which the candidate is asked to blow to test the capacity of his lungs. The dial, which makes the deception complete, is in plain view of the person blownig into the Lung Tester, and is supposed to register the pressure of air blown into the instrument. Its interior contains a mechanism ingeniously constructed so that when a person blows into the instrument an air valve disengages a lever which releases a spring, exploding a 32-cailbre blank cartridge, and at the same time opening an air passage into a tube in which there is a receptacle filled with flour. This tube is connected to an opening in the dial so that the flour is blown with a strong blast squarely on the end of the nose of the person and scattering it all over his face. With this Lung Tester we furnish 25 blanks nicely arranged, with certain questions pertaining to the candidate's health, age, etc., so as to lead him on to the test in such a manner that there is no possible chance of him suspecting any joke.

Price, all complete, including 50 blank cartridges and 25 question blanks. (Weight packed 14 pounds.) $10 00
Extra question blanks; per hundred $0 40
Extra blank cartridges; per box of 50 (cannot go by mail).. $0 25

Bueschel Collection.

Drop a Penny and Grip.

With this machine a candidate will always get more (?) for his money than he expected. It costs him but a penny to try his grip, but he will get a bath and the startle that he'll get from the explosion may cause him to swallow his false teeth. After a candidate has been up against this infernal machine, the scolding of his wife for being out late at night will have no more effect on him than a ham sandwich on an empty stomach.

BRIEF.

826. This Machine is a perfect imitation of a slot machine for recording the number of pounds a person can grip. The index on dial will register, but is only a "fake" to deceive the candidate. When the candidate grips the handles, a spray of water is forced into his face and when he releases the grip a 32-calibre blank cartridge will be exploded with a loud report—never fails to startle. Price, including 50 blank cartridges $15.00
Extra blank cartridges, (cannot go bymail); per box of 50..... $0.25

Weight of No. 826, packed, 65 pounds.



Bueschel Collection.

tion and bar locations of the past, but the new amusements now had dedicated store fronts and large indoor areas to fill. So the games got bigger. The ultimate enlargement was the recreation of the game of bowling in a coin machine format, requiring a long alley to contain the miniaturized balls used in play. By 1905 at least half a dozen efforts had been made to bring bowling under coin control. The most successful, an attempt that provided a product that survived for another quarter century, and then spawned a new arcade amusement that has endured until the present era, was a 1902 game called BOX BALL. About one-third the size of a regulation bowing alley, that alone making it an enormous machine, BOX BALL was promoted as the perfect bowing game for "cigar stores, pool and billiard rooms, regulation alleys, barber shops, etc.," with a return of "$513 profit in 51 days on an investment of $150 (on) the operation of one American Box Ball alley in Sullivan, Indiana."[171] The producers of the game were a Sullivan, Indiana, industrialist named Frederick J. Hoke and his salesman-associate J. Irving Holcomb, former partners in a manufacturing firm in Sullivan who formed a new producing company in Indianapolis, Indiana to make the bowling game, calling their enterprise the American Box Ball Company. BOX BALL become a major hit as one of the first arcade-inspired machines as opposed to any device that might have been moved in by an operator to see if it could capture some customer coinage.[172] The location that was once the slave to whatever machines were placed on the premises was turning the tables and creating its own amusements. The arcade was coming of age.

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[170] Edmund De Moulin and Ulysses S. De Moulin, of Greenville, Illinois, *Dummy Lung Tester,* Applied: July 20, 1901; U.S. Patent No. 692,251, February, 4, 1902.

[171] Data from Frederick J. Hoke entry, *The National Cyclopaedia of American Biography,* and advertisement, American Box Ball Company, *The National Police Gazette,* October 28, 1905.

[172] *Ibid.*

A PLACE OF THEIR OWN

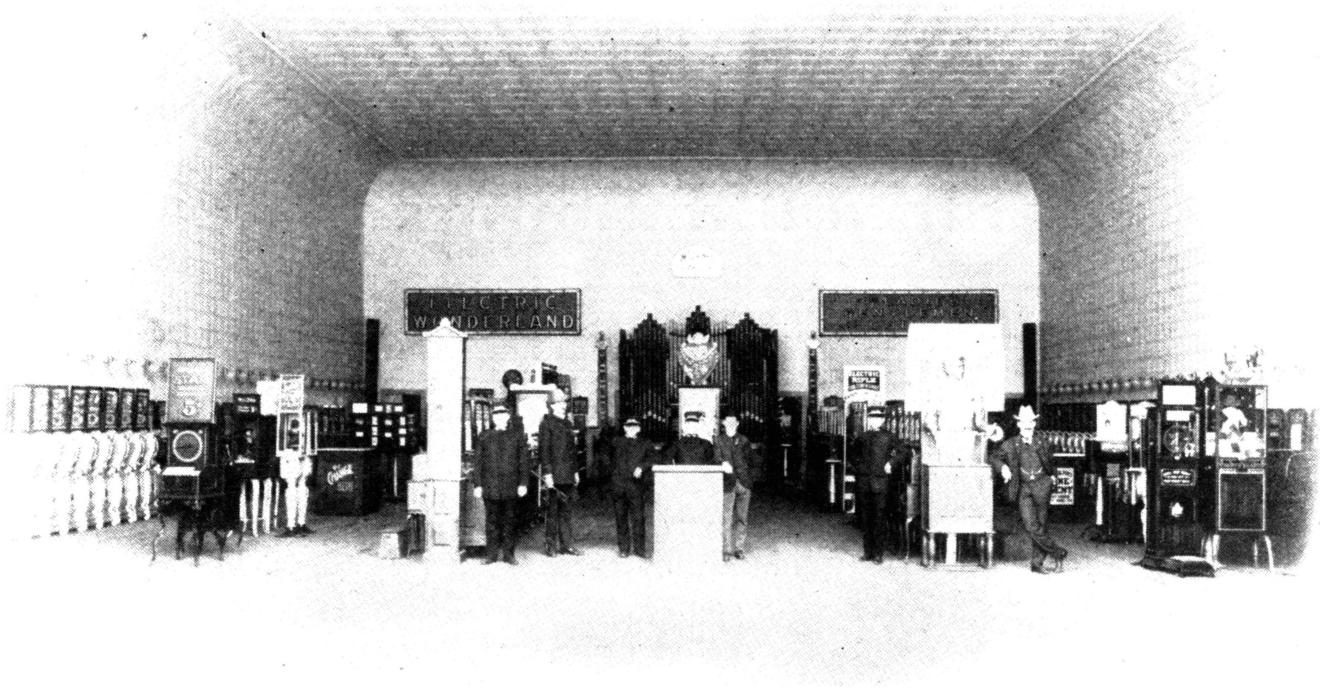
It took twenty years, but increasingly and inexorably the arcade machine moved from sawdust floors and swinging doors into its own abode, generally a revamped store front that had, based on the advice in the free Mills Novelty Company arcade booklet mentioned in the Herbert S. Mills interview and widely advertised, "...a steady burning electric sign reading 'Penny Arcade,' 'Penny Vaudeville' or some other suitable name."[173] Beyond that, "An arcade should be open from 8 A.M. to 11 or 12 o'clock at night to get the best results. On busy days, Saturday nights, Sundays and Holidays," it was positioned as a sort of amusement convenience store if you will that had an intriguing interior with, as made by Mills, "...a handsome, bell-shaped, ceiling chandelier particularly for Arcade use, which is not only very decorative, but an economical lighting fixture as well."[174] The new arcades became, to use a name incorporated by Mills for its franchised string of captive locations, Wonderlands.



Rated as Chicago's first arcade, the Penny Arcade at Sportsman's Park, a Chicago area race track, had mostly Mills, Caille and Rosenfield lifters and punchers. Mills BAG PUNCHING MACHINE suggests summer 1904 operation, although the arcade may be older. The Coin Machine Journal, January 1936.

The name was not a new one, and had been used for a number of the dime museums and crude vaudeville shows that dotted most major American cities in the 1880s, all patterned after P.T. Barnum's New York Museum of the 1840s. One of the better known, "Detroit's *Wonderland* was managed by James H. Moore. The enterprise opened in 4-1/2 floors of a building on Jefferson Avenue at Larned, on Christmas Day, 1886. During its hey-day *Wonderland* had as many as sixty-five persons on the payroll. There was the crystal maze, the Bijou theatre, the menagerie, a gallery of art and a permanent display of oddities and curiosities."[175] In 1898 (as a *New Wonderland* was being built across the street from City hall) Detroit's *Wonderland* was running American Biograph films and had a KINETOSCOPE parlor with 7 machines. But it was hardly an arcade as the coin machines were a minor side show to the other major entertainments under roof.

It took another more serious entrepreneur to take the arcade out of someone else's operation and make it stand on its own. "In 1894, Mitchell H. Mark, who had been in the hat business in Buffalo, purchased a run-down Phonograph Parlor in that city. This location was suffering from both the Depression (of 1893) and a lack of showmanship. Mark installed KINETOSCOPES, rechristened the parlor 'Edisonia Hall,' and advertised his attractions. Soon he was earning a comfortable, tho by no means conspicuous, livelihood. Both he and his brother, Moe Mark, branched out into varied theatrical ventures, but they always remained in the arcade field. The Marks' first break came when the Pan-American Exposition of 1901 brought the crowds to Buffalo and their People's Arcade on Main Street earned some $35,000. As a result of this flood of business, Mitchell Mark conceived the idea of getting volume patronage on coin machines by lowering prices from



The Watling arcade at White City, a south side Chicago amusement park, attempted to duplicate the Mills Novelty Edisonia operation in St. Louis in 1904. Cast iron MUTOSCOPE machines are along the left wall, and a Watling GUESSING SCALE is at the right. The change counter is at the far left, half way back, among a number of Roovers fortune tellers. Bueschel Collection.

a nickel to a cent, and by locating where throngs of Passers-by would insure a continuous patronage. He called his new parlor a 'Penny Arcade' and, after its initial success in Buffalo, decided to test the idea in a New York City uptown location. When this proved a hit, Mark moved into New York's Union Square, one of the city's busiest thorofares, where, in 1903, the penny arcade came into its own."[176] This same process of starting with one parlor and ending up with another was soon taking place across the country. Old plat maps of Euclid Beach, Cleveland's premier amusement park, showed an attraction called "Edisonia" on the site of the park's later penny arcade. It was during this period of growth that a group of men, who were destined to become movie moguls of Hollywood, became associated with the coin machine exhibition business. Marcus Loew, later to become the founder and first president of Metro-Goldwyn-Mayer Pictures Corporation (MGM), left the fur coat business and, ""Having amassed a small capital,...formed a partnership with David Warfield and Adolph Zukor," with Zukor, also a furrier, later becoming a producer and a pioneer of feature films, and also the man most influential in moving movie production to Hollywood, California, "...and opened a penny arcade on Union Square. In 1904, still in association with Warfield, he formed an organization with $100,000 capital, and opened numerous arcades in New York City and Cincinnati, Ohio, which prospered beyond expectation."[177] This group was also joined by William Fox, and soon after, they added arcades in Boston, Newark and Philadelphia, calling themselves the Automatic Vaudville Company. Because of the newness of the venture, credit for the first arcade was often given to these latter entrepreneurs. "Interested in the first such amusement center to ever be opened were two men now world famous, Mr. Adolph Zukor of the Paramount-Publix Theatres, and Mr. Marcus Loew of the Loew Theatres. This first arcade was opened in Union Square, New York City. It adds an air of business romance to this old industry with its birth."[178] The fact of the matter is they entered the venture as partners with Mitchell Mark, the Father of the penny arcade business, who had founded the format and had given the enterprise its popular name, one that would last another half century.

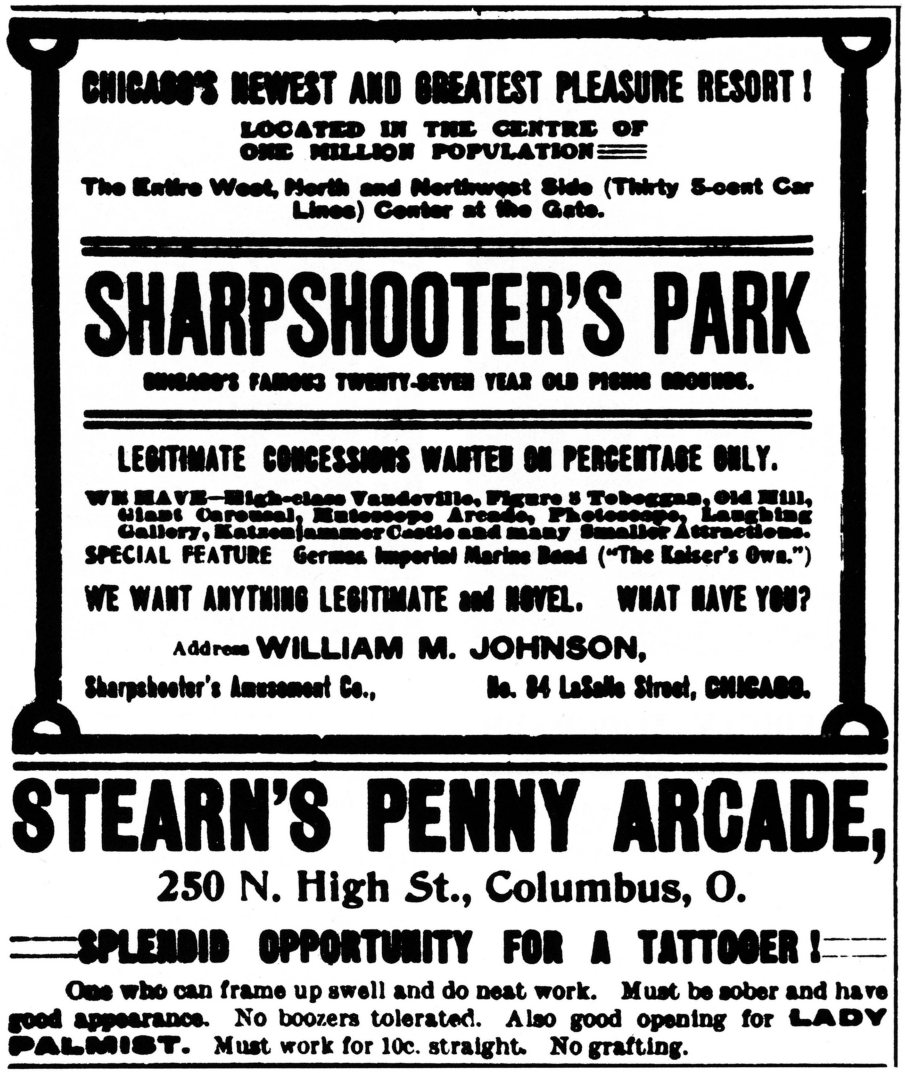
Once established and promoted, the penny arcade business attracted entrepreneurs that took it in a variety of directions. It was also about this time that Art Caille and John Kunsky formed their arcade partnership in Detroit, with Kunsky starting first. "While working for Caille, he bought machines and placed them in road houses in Canada. He soon had $10,000 in cash, and in 1902 he used the money to become a partner with Caille in a penny arcade at the Belle Isle Bridge. The business went bankrupt," but that didn't deter the pair.[179] This was followed by an arcade at Wolff's Park, often called "Detroit's Coney Island. The outside attractions, including the miniature railroad, roller coaster, circle swing and dance hall" were brightly lighted by electricity, giving the site its nickname of Electric Park. "A $15,000 penny arcade has been installed by the Caille-Sinard Company and among its attractions will be all the latest novelties."[180] Kunsky later changed his name to King, leaving the arcade business to devote his energies to films. "Like most show people, he was an affable, care-free party giver who was free with a buck. His parties at his home in Riverside, Ontario, made history. It was there he entertained Rudolph Valentino, Marguerite Clark, Alla Nazimova, John Barrymore and others, and took the then 8-year-old Jackie Coogan riding in his speed-

boat."[181] A quarter century after his arcade ventures with Art Caille, John H. King "...became vice president of First National Pictures, Inc., then one of the largest producing organizations (and) in 1929 (he) ...sold (out) to Paramount Film Corporation," making him yet another arcade personality that became a major factor in motion pictures.[182]

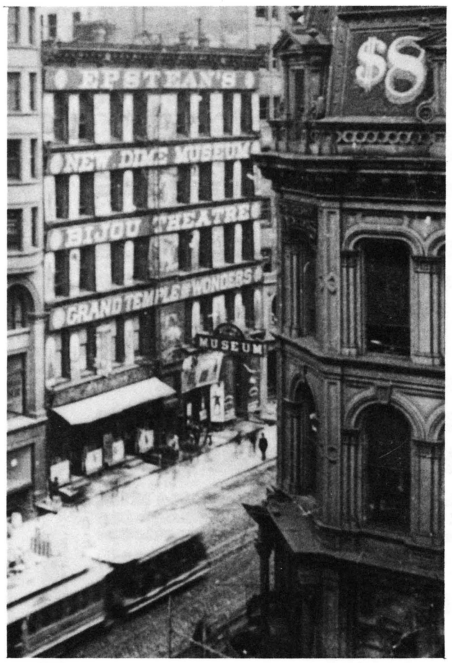
The amusement park route to arcade importance was just as quickly picked up by Chicago's Watling Manufacturing Company, the only copycat producer to achieve the stability of an established arcade and full line coin machine maker. In a location coup, Tom Watling locked up the arcade machine concession at White City, an amusement park that opened up in 1904, the same year as the St. Louis World's Fair, at 63rd Street and South Parkway in the south side of Chicago. He also called his virtual duplication of the Mills Edisonia operation in St. Louis Automatic Vaudeville. "The machines used in the Automatic Vaudeville are the best that have yet been invented. Would you know if your lungs are weak? You can find out in the Automatic Vaudeville. There are scores of machines which are carefully and minutely tabulated to show the exact condition of the visitor. The use of this machine will be as comprehensive and complete as an examination by an expert physician (Note: Just try and say that today!). In exchange for other pennies the spectator can test his lifting capacity, his hitting ability and the strength of his grip. Not only may he find out his strength and his weakness, but he can find a cure for them. It is a well known fact that electricity is a cure for many weaknesses, and in the Automatic Vaudeville he will find many devices for receiving electric and magnetic treatments which are of great benefit. There is no limit to the fun and entertainment which any person may obtain from this attraction. That it is pleasing and interesting is well evidenced by the great crowds which have swarmed into it since the opening of White City. There is hardly a form of amusement which cannot be obtained for one cent. The machines are of the latest patterns and contain all of the recent improvements."[183] What wasn't mentioned was the illegality then but mostly later, of making false medical claims. But Watling seemingly got away with it.

The penny arcade became a business proposition of enormous opportunities for those willing to embark on a new career, much like the boom in video rental outlets eighty years later. In the beginning the arcades were well kept and well patronized. According to "Mr. O.R. Hermanek of Minneapolis whose experience with coin machines and penny arcades dates from the (eighteen) nineties, 'prior to 1907...the penny arcade was a high class center of entertainment, attracting the best class of customers, and providing an attractive atmosphere through beautiful furnishings and well-kept machines.' Hermanek, who is 59 years old (in 1937), began with the Mills Novelty Company in 1898 as a repair man. Later he became an inspector and helped to perfect the famous DEWEY machines. He left the factory to become a manager of arcades operated by the Mills Company in various cities. Later he opened an arcade in Wonderland Park in Minneapolis with a former fellow workman. While there he opened a down-town arcade in a theatre building. Located on the second floor of the theatre, this arcade helped to entertain overflow patrons and hold them over for second shows. In all, he operated and managed arcades in many different cities, including Chicago; Chattanooga, Tenn.; Louisville, Ky.; St. Paul, Minneapolis, Minn., etc."[184]

For all their independence of audience and activity, the early movies and dedicated arcades were as often as not tied together by an operating umbilical.



Penny Arcade activity! By spring 1904 dedicated arcades were a viable business. These April 30, 1904 ads in The Billboard note that Sharpshooter's Park (later renamed Riverview Park to become Chicago's premier outdoor amusement park) has a MUTOSCOPE arcade and a PHOTOSCOPE machine. Stearn's Penny Arcade in Columbus, Ohio, is looking for a tatooist that doesn't booze and a lady palm reader that doesn't skim the money. The Billboard, April 30, 1904.





Above: Detroit's new Wonderland, built in 1898, picked up the KINETOSCOPE parlor and American Biograph films run in its earlier location on Jefferson Street. Manager Lames H. Moore built this new facility right across the street from City Hall. Bueschel Collection.

Top left: The Kinetoscope parlors and penny arcades to come were based on a primary location well established in major cities, that of the "Dime Museum" where it cost 10¢ to get in and see the wonders. This is Epstean's on Clark Street, two blocks west of State Street in Chicago in 1892, just before the coin-ops became popular. Chicago Historical Society.

Left: Detroit's Wonderland ran American Biograph films, operated as a franchise by the American Mutoscope Company in New York. Herman Casler receives credit for the invention. Courtesy Detroit Historical Museum.

AMERICAN BIOGRAPH

Owned and operated by the American Mutoscope Co., New York.

Invention of Herman Casler.

1. UNITED STATES CAVALRY CHARGE at Fort Ethan Allen.

2. The U. S. Soldiers who will soon occupy Cuba.

3. CAPT. SIGSBEE of the ill-fated Maine, leaving the Army and Navy Building, Washington, D. C.

4. U. S. Cruiser Brooklyn—the Flagship of the Flying Squadron—in her war paint at anchor in Hampdon Roads.

5. VIZCAYA.—Picture of Spanish Warship taken while she was crossing the Bar at Sandy Hook.

6. Maxim Rapid Fire Gun. Showing the inventor of this Gun in the act of firing it.

7. A trip through the Haverstraw Tunnel at the rate of 60 miles an hour.

8. U. S. Battleship Texas. — Picture taken from a moving tug in New York bay.

9. U. S. Sailors who will soon man the "Vizcaya."

10. Cavalry Charge through lines of Skirmishers.

The advantage, if any, was a matter of rent and consumers. Rightly or wrongly, it was widely felt that customers for one were prospects for the other, and vice versa. Therefore the five cent films and penny machines were often under roof together. "The first nickelodeon appeared in Pittsburgh in June, 1905, in a remodeled storeroom, and, ironically, was located next door to a Penny Arcade. Its instantaneous success led to a skyrocketing boom. Soon arcade operators from coast-to-coast were installing projection machines, usually in vacant lofts over their arcades. In several locations customers were first persuaded to visit the upstairs movie by means of a 'crystal staircase' constructed of glass, with running water and electric lights underneath. On their way down from the nickelodeon, patrons were routed out through the arcade itself, and as they passed through the rows of machines they would often drop odd pennies into the chutes. Other arcades partitioned off a section for moving pictures, and moved their coin machines into the lobby. Arcade owners began to feel real competition from the nickelodeon, for the new movie houses sprang up whenever a vacant store offered itself as a location."[185]

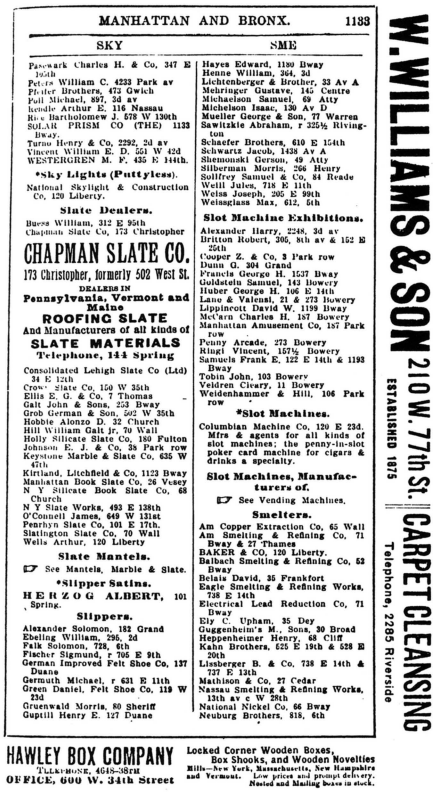
The threat of extinction by film may have been a real concern, yet in that optimistic year of 1905 arcade operators opted to largely ignore the concern, choosing instead to keep the nickelodeons under their control even though the evidence indicated that a whole new crew of entrepreneurs were rushing in to the promising field, bypassing its arcade beginnings. As the new year dawned American business looked healthier than it had in years, Japan had defeated Czarist Russia in a contained war at Port Arthur in the Far East (leading to a rash of MUTOSCOPE flip-movie features of the battles) and the American President, Teddy Roosevelt, was about to step high on the world stage as the peacemaker between the two warring nations. It was the beginning of what was believed to be (and later confirmed as) the American Century, although the two later threats to American safety and industrial dominance — The Russian Empire becoming the expansionistic Soviet Union for three quarters of a century and Imperial Japan becoming the industrial giant of the last quarter of the new century —



Left: When Mitchell H. Mark brought the idea of his People's Arcade in Buffalo, New York to New York City in 1901, reducing the prices on all his machines and calling his new uptown location a Penny Arcade, he started an industry. Dedicated arcades became the norm. Courtesy Fred Fried.

Bottom: The turning of the tide! Thomas L. Tally's Los Angeles arcade location on Main Street in Los Angeles around 1902 shows KINETOSCOPE machines at left, MUTOSCOPE MODEL D "Clamshell" machines in center, and a sit-down Edison PHONOGRAPH listening area at right. The wall holes at back are for projected VITASCOPE or PROJECTING KINETOSCOPE film viewers who were afraid of the dark, viewing the films through the holes while sitting not unlike a peep show. Three years later, the movies became Nickelodeons, and the coin machines and projected films were separated forever. The Bettman Archive.





MANHATTAN AND BRONX. 1133

SKY

Pawmark Charles H. & Co, 347 E 105th
Peters William C. 4233 Park av
Pfeifer Brothers, 472 Gwich
Poll Michael, 897, 3d av
Rendle Arthur E, 116 Nassau
Rice Bartholomew J. 578 W 130th
SOLAR PRISM CO (THE) 1133 Bway.
Turno Henry & Co, 2292, 2d av
Vincent William E. D. 551 W 42d
WESTERGREN M. F, 435 E 144th.

*Sky Lights (Puttyless).

National Skylight & Construction Co, 120 Liberty.

Slate Dealers.

Burns William, 312 E 95th
Chapman Slate Co, 173 Christopher

CHAPMAN SLATE CO.
173 Christopher, formerly 502 West St.
DEALERS IN
Pennsylvania, Vermont and Maine
ROOFING SLATE
And Manufacturers of all kinds of
SLATE MATERIALS
Telephone, 144 Spring

Consolidated Lehigh Slate Co (Ltd) 34 E 12th
Crow Slate Co, 150 W 35th
Ellis E. G. & Co, 7 Thomas
Galt John & Sons, 253 Bway
Grob German & Son, 502 W 35th
Hobbie Alonzo D. 32 Church
Hill William Galt jr, 70 Wall
Holly Silicate Slate Co, 180 Fulton
Johnson E. J. & Co, 38 Park row
Keystone Marble & Slate Co, 635 W 47th
Kirtland, Litchfield & Co, 1123 Bway
Manhattan Book Slate Co, 26 Vesey
N Y Silicate Book Slate Co, 68 Church
N Y Slate Works, 493 E 138th
O'Connell James, 649 W 131st
Penrhyn Slate Co, 101 E 17th.
Slatington Slate Co, 70 Wall
Wells Arthur, 120 Liberty

Slate Mantels.

☞ See Mantels, Marble & Slate.

*Slipper Satins.

HERZOG ALBERT, 101 Spring.

Slippers.

Alexander Solomon, 182 Grand
Ebeling William, 295, 2d
Falk Solomon, 728, 6th
Fischer Sigmund, r 705 E 9th
German Improved Felt Shoe Co, 137 Duane
Germuth Michael, r 631 E 11th
Green Daniel, Felt Shoe Co, 119 W 23d
Gruenwald Morris, 80 Sheriff
Guptill Henry E. 127 Duane
Hayes Edward, 1130 Bway
Henne William, 364, 3d
Lichtenberger & Brother, 33 Av A
Mehringer Gustave, 142 Centre
Michaelson Samuel, 69 Atty
Michelson Isaac, 130 Av D
Mueller George & Son, 77 Warren
Sawitzkie Abraham, r 325½ Rivington
Schaefer Brothers, 610 E 156th
Schwartz Jacob, 1438 Av A
Shemonski Gerson, 49 Atty
Silberman Morris, 266 Henry
Solffrey Samuel & Co, 84 Reade
Weill Jules, 718 E 11th
Weiss Joseph, 205 E 99th
Weissglass Max, 612, 5th

Slot Machine Exhibitions.

Alexander Harry, 2248, 3d av
Britton Robert, 305, 8th av & 152 E 25th
Cooper Z. & Co, 3 Park row
Dunn G. 304 Grand
Francis George H. 1537 Bway
Goldstein Samuel, 143 Bowery
Huber George H. 106 E 14th
Lane & Valenzi, 21 & 273 Bowery
Lippincott David W. 1199 Bway
McCarn Charles H. 187 Bowery
Manhattan Amusement Co, 187 Park row
Penny Arcade, 273 Bowery
Ringi Vincent, 157½ Bowery
Samuels Frank E. 122 E 14th & 1193 Bway
Tobin John, 103 Bowery
Veldren Civary, 11 Bowery
Weidenhammer & Hill, 106 Park row

*Slot Machines.

Columbian Machine Co, 120 E 23d, Mfrs & agents for all kinds of slot machines; the penny-in-slot poker card machine for cigars & drinks a specialty.

Slot Machines, Manufacturers of.

☞ See Vending Machines.

Smelters.

Am Copper Extraction Co, 65 Wall
Am Smelting & Refining Co, 71 Bway & 27 Thames
BAKER & CO, 120 Liberty.
Balbach Smelting & Refining Co, 52 Bway
Belais David, 35 Frankfort
Eagle Smelting & Refining Works, 738 E 14th
Electrical Lead Reduction Co, 71 Bway
Ely C. Upham, 35 Dey
Guggenheim's M., Sons, 30 Broad
Heppenheimer Henry, 68 Cliff
Kahn Brothers, 625 E 19th & 528 E 20th
Lissberger B. & Co, 738 E 14th & 737 E 13th
Mathison & Co, 27 Cedar
Nassau Smelting & Refining Works, 13th av c W 28th
National Nickel Co, 66 Bway
Neuburg Brothers, 816, 6th

W. WILLIAMS & SON 210 W. 77th St. CARPET CLEANING
ESTABLISHED 1875 Telephone, 2285 Riverside

HAWLEY BOX COMPANY
TELEPHONE, 4648-38TH
OFFICE, 600 W. 34th Street
Locked Corner Wooden Boxes, Box Shooks, and Wooden Novelties
Mills—New York, Massachusetts, New Hampshire and Vermont. Low prices and prompt delivery. Nested and Mailing boxes in stock.

Acceptance was rapid. The 1901 Trow's Business Directory for the City of New York lists 20 arcade locations, with some operators having more than one. The business heading is "Slot Machine Exhibitions," although the name Penny Arcade is included in the listing. Trow Business Directory, New York City, 1901.

were stepping up on the stage at the same time. But it was hardly obvious at the time, and all the positive indicators were American.

As for the arcade field, optimists saw nothing but a rosy future and even pessimists were buying in to operate arcades. Experienced entrepreneurs in the business split with their partners and expanded in the industry by going off on their own. A major move came when Marcus Loew took his investment out of the Automatic Vaudville Company and, in a new partnership with popular stage actor David Warfield, formed the People's Vaudville Company, operating four arcades including one on 23rd Street in New York and another in a prosperous Jewish section of town called Harlem. Where would it end? Or would it? The industry's chief spokesman, Herbert S. Mills of the Mills Novelty Company in Chicago, saw only progress ahead, and voiced it: "Not even for the sake of argument will I admit that the arcade is a fad. A fad, you know, is a flitting thing here today and gone tomorrow. The arcade has a firm hold upon the public. It is a popular form of amusement — attractive, innocent, inexpensive. You may know it, we have arcades in several cities, prominent among which are the Mills Edisonias in Cincinnati and Denver. These have been running constantly for several years. Mark & Wagner, now known all over the United States, started their first arcade in Buffalo during the Pan American Exposition. It paid so well that they have added a few every year until they now have twelve or fifteen arcades in various parts of the country representing an investment of over a million dollars. The best evidence that they pay is that we are still running them. As a matter of fact the crowds are increasing every day. The daily newspapers mention them in their dramatic columns just like the theatre notes."[186]

While that level of media coverage wouldn't last long, soon passing over the faddish arcades in favor of film, the arcades themselves would endure. But not without change. They would see their ups and downs, and dramatic revisions in their audiences over the years ahead. Even their main street locations would, with the transformation of time, ultimately place them on the back streets of their urban hosts. The musings of the usually clairvoyant Herbert S. Mills could not foretell their future, or envision the machines to come, for the arcades and their mechanical enjoyments were a living expression of the popular culture of their changing times. That made them both current and crass, amusing and degrading, fascinating and foul, and kept them in a constant state of flux. Those traits were there in 1905, in the twentieth year of American arcade machines, and they are there today. Mills was right in that sense when he said; "It is not the arcade room nor the machines that attract, but what they do."[187] It is almost a century since he made that statement, and it still rings true.

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[173] Herbert S. Mills, *Mills Penny Arcades,* Form 1443, Mills Novelty Company, Jackson Boulevard and Green Street, Chicago, Illinois, June 10, 1907.

[174] *Ibid.*

[175] John Storm, "Detroit's Wonderland Dime Musee," *Chronicle — The Bi-Monthly magazine of the Historical Society of Michigan*, September-October,1988.

[176] "The Penny Arcade," *The Billboard,* March 15, 1947.

[177] Marcus Loew entry, *The National Cyclopaedia of American Biography.*

[178] William Gersh, "A Visit to 'The Penny Arcade' Headquarters," *Automatic Age,* October 1931.

[179] Frank Morris, "Ran Penny Arcade to Movie Empire, " *Detroit News,* Thursday, January 3, 1952.

[180] "Wolff's Opens Tonight. Many New Attractions For Popular Summer Resort," (no source, undated), Margaret Caille Scrapbook, Farmington (Detroit), Michigan, November 7, 1973.

[181] Frank Morris, "Ran Penny Arcade to Movie Empire," *Detroit News,* Thursday, January 3, 1952.

[182] "Detroit Movie Pioneer, John King, Dies at 77,"*Detroit Free Press,* Thursday, January 3, 1952.

[183] *The White City Magazine and Souvenir Program,* White City Construction Company, Chicago. Copyright 1905. Bueschel collection.

[184] "Real Era of the Penny Arcade was Prior to 1907," *Automatic Age,* January, 1938.

[185] "The Penny Arcade," *The Billboard,* March, 15, 1947.

[186] "Pat-Chats," *The Billboard,* April 29, 1905.

[187] *Ibid.*

POPULAR ARCADE MACHINES OF THE 1870-1905 PERIOD

Arcade machine manufacturers of the pioneer period 1870-1905 are listed in alphabetical order and location with their models listed in chronological order as they appeared. Many arcade machines had both a long manufacturing and service life with their production and usage dates often extending considerably beyond their introduction dates.

UNITED STATES ARCADE MACHINES

Manufacturer and Location	Format	Name	Date
Abbott Machine Company, Jackson, MI	(Unknown)	(UNKNOWN)	1901
Acme Novelty Works, Detroit, MI	Fortune	INFORMATION SLOT MACHINE	January 1891
Adams Electric Battery Company, Chicago, IL	Shocker	COIN ELECTRIC BATTERY	1898
Aerating Machine Manufacturing Company, New York, NY	(Unknown)	(UNKNOWN)	1904
American Amusement Company, Philadelphia, PA	(Unknown)	(UNKNOWN)	1901
American Auto-Engineering Company, New York, NY	Athletic	PUNCHING, GRIP AND WRIST MACHINE	April 1901
American Auto-Machine Company, New York, NY	Peep Show	AUTO-MACHINE	1897
	Peep Show	ARTOSCOPE	April 1899
	Peep Show	METAL CASED ARTOSCOPE	April 1899
	Peep Show	AUTO-RAMA	May 1899
	Peep Show	PHOTO-RAMA	May 1899
	Peep Show	MUSICAL AUTO-RAMA	May 1899
	Peep Show	MUSICAL PHOTO-RAMA	May 1899
	Athletic	STRIKING NUMBER MACHINE	October 1899
	Athletic	PUNCHING MACHINE	May 1900
American Automatic Company, New York, NY	(Unknown)	(UNKNOWN)	1901
American Automatic Photographic Co., Cleveland, OH	Photograph	AUTOMATIC CAMERA	March 1902
American Box Ball Company, Indianapolis, IN	Bowling	BOX BALL	1902
American Cosmorama Company, Philadelphia, PA	Peep Show	COSMORAMA	1900
	Peep Show	COSMORAMASCOPE	1900
The American Excelsior Automatic Supply Company, St. Louis, MO	Shocker	EXCELSIOR	November 1890
American Mutoscope Company, New York, NY	Peep Show	MUTOSCOPE (non-coin)	December 1895
	Peep Show	MUTOSCOPE	February 1896
	Peep Show	CONSECUTIVE-VIEW MUTOSCOPE	February 1896
	Peep Show	AMERICAN BIOGRAPH (non-coin)	October 1896
	Peep Show	MUTOSCOPE MODEL A	December 1896
	Peep Show	IMPROVED AMERICAN BIOGRAPH	

		(non-coin)	March 1897
	Peep Show	CONSECUTIVE-VIEW MUTOSCOPE MODEL A	April 1897
	Peep Show	IMPROVED CONSECUTIVE-VIEW MUTOSCOPE	May 1897
	Peep Show	AMERICAN BIOGRAPH (non-coin)	September 1897
	Peep Show	MUTOSCOPE MODEL B	February 1898
	Peep Show	IMPROVED MUTOSCOPE MODEL B	February 1898
	Peep Show	MUTOSCOPE MODEL C ("Oak Mutoscope")	1899
	Peep Show	MUTOSCOPE MODEL D "Clamshell" ("Iron Mutoscope")	January 1899
American Mutoscope And Biograph Company New York, NY	Peep Show	AMERICAN BIOGRAPH (non-coin)	November 1899
	Peep Show	MUTOSCOPE MODEL B	1899
	Peep Show	IMPROVED MUTOSCOPE MODEL B	1899
	Peep Show	MUTOSCOPE MODEL C ("Oak Mutoscope")	1899
	Peep Show	MUTOSCOPE MODEL D "Clamshell" ("Iron Mutoscope")	1899
	Peep Show	MUTOSCOPE MODEL DL "Iron Horse"	1901
	Peep Show	BIOGRAPH (non-coin)	March 1902
	Peep Show	BANJO MUTOSCOPE	1904
	Peep Show	EXHIBITION MUTOSCOPE	1904
	Peep Show	CARNIVAL MUTOSCOPE	1905
	Peep Show	SCOPES	1905
American Panograph Company, Parkersberg, WV	Peep Show	STEREO PANOGRAPH	September 1900
American Parlor Kinetoscope Company, Washington, DC	Peep Show	PARLOR KINETOSCOPE (non-coin)	1897
American Phonoscope Company, Denver, CO	Peep Show	PHONOSCOPE	December 1901
American Spirometer Company, Medina, NY	Athletic	SPIROMETER	1901
Amusement Company of America, New York, NY	(Unknown)	(UNKNOWN)	1904
Amusement Machine Company, New York, NY	Athletic	(UNKNOWN)	July 1890
Arcade Company of America, New York, NY	(Unknown)	(UNKNOWN)	1904
The Armat Company, Washington, DC	Peep Show	VITASCOPE (non-coin)	August 1895
	Peep Show	VITASCOPE (non-coin)	March 1898
	Peep Show	COIN VITASCOPE	May 1900
	Peep Show	IMPROVED VITASCOPE (non-coin)	September 1903
Arthur Manufacturing Company, Chicago, IL	Athletic	LUNG TESTER	1898
Astrological Machine Company, Chicago, IL	Fortune	(UNKNOWN)	1890
Isaiah P. Atsatt, Mattapoisett, MA	Peep Show	(UNKNOWN)	May1902
Auto-Device Manufacturing Company, Chicago, IL	(Unknown)	(UNKNOWN)	November 1902
Auto-Machine Company, New York, NY	Peep Show	AUTO-RAMA	1900
Automatic Amusement Parlor, Philadelphia, PA	(Unknown)	(UNKNOWN)	1900
Automatic Amusement Supply Company, Philadelphia, PA	(Unknown)	(UNKNOWN)	1900
Automatic Battery Company, Brooklyn, NY	Shocker	AUTOMATIC BATTERY	February 1888
	Shocker	AUTOMATIC ELECTRIC BATTERY	September 1888
Automatic Construction Company, New York, NY	Shocker	DOCTOR	June 1905
Automatic Electric Company, New York, NY	Peep Show	LIVING PICTURES	1896
Automatic Machine Company, New York, NY	(Unknown)	(UNKNOWN)	1903
Automatic Machine Company, Ltd., New Orleans, LA	Amusement	HORSE RACES	August 1891
Automatic Machinery Company, Rochester, NY	(Unknown)	(UNKNOWN)	1896
Automatic Manufacturing Company, New York, NY	(Unknown)	(UNKNOWN)	March 1892
Automatic Novelty Company, Kansas City, MO	(Unknown)	(UNKNOWN)	1904
Automatic Novelty Company, New York, NY	Athletic	DUMB-BELL LIFT AND GRIP DEVELOPER	October 1904
	Athletic	THREE WAY MUSCLE TESTER	October 1904
	Athletic	STAR LIGHT GRIP	October 1904
	Athletic	PUSH OR PULL GRIP MACHINE	October 1904
	Athletic	HIT THE COON	October 1904

	Athletic	GLOOMY GUS STRENGTH TEST	1905
Automatic Novelty Company, Philadelphia, PA	(Unknown)	(UNKNOWN)	1895
Automatic Photograph Machine Company, New York, NY	Photograph	AUTOMATIC PHOTOGRAPH MACHINE	1903
Automatic Photograph Machine Company, WV	Photograph	AUTOMATIC PHOTOGRAPH MACHINE	July 1895
	Photograph	IMPROVED AUTOMATIC PHOTOGRAPH MACHINE	January 1896
Automatic Portable Bowling Alley Company, Menonminee, MI	Bowling	AUTOMATIC PORTABLE BOWLING ALLEY	April 1902
	Bowling	IMPROVED AUTOMATIC PORTABLE BOWLING ALLEY	April 1902
Automatic Selling Machine Company, New York, NY	Card Vender	AUTOMATIC SELLING MACHINE	January 1886
	Card Vender	IMPROVED AUTOMATIC SELLING MACHINE	August 1886
	Athletic	GRIP-TESTING MACHINE	September 1888
Automatic Spirometer Company, Medina, NY	Athletic	AUTOMATIC SPIROMETER	1898
	Athletic	AUTOMATIC THERAPY	1900
Automatic Stamping Machine Company, Phoenix, AZ	Stamper	AUTOMATIC STAMPING MACHINE	June 1902
	Stamper	BLANK STAMPING MACHINE	May 1905
Automatic Target Machine Company, New York, NY	Target	AUTOMATIC TARGET	March 1896
	Target	AUTOMATIC TARGET	July 1899
	Target	AUTOMATIC TARGET	March 1900
	Target	AUTARM PISTOL SHOOT	April 1900
	Target	AUTARM ELECTRIC RIFLE	June 1901
	Target	AUTARM ELECTRIC PISTOL	March 1902
	Target	AUTARM PISTOL	November 1903
	Target	AUTOMATIC TARGET	June 1904
	Target	AUTOMATIC PISTOL	June 1905
	Target	AUTOMATIC ELECTRIC TARGET	July 1905
Automatic Weighing, Lifting and Grip Machine Company, Portland, ME	Athletic	AUTOMATIC WEIGHING, LIFTING AND GRIP MACHINE	December 1897
	Athletic	AUTOMATIC WEIGHING, GRIP AND LIFT MACHINE	August 1898
	Athletic	SELECTIVE AUTOMATIC WEIGHING, GRIP AND LIFT MACHINE	November 1899
Autoscope Machine Company, Chicago, IL	Peep Show	THE AUTOSCOPE	1897
Auto-Stereoscope Company, New York, NY	Peep Show	AUTO-STEREOSCOPE	August 1899
	Peep Show	MUSICAL AUTO-STEREOSCOPE	November 1899
Babbitt Coin-Actuated Machine Company, New York, NY	(Unknown)	(UNKNOWN)	September 1893
Peter Bacigalupi, San Francisco, CA	Peep Show	HAND KINETOSCOPE	August 1897
	Peep Show	HAND KINETOSCOPE MODEL NO. 2	1898
	Peep Show	(UNKNOWN)	1900
Anthony Baebi, Newark, NJ	(Unknown)	(UNKNOWN)	1893
Clyde C. Bair, Tiffin, OH	Stamper	ALUMINUM NAME PLATE MACHINE	May 1903
James S. Barcus, Chicago, IL	Fortune	(UNKNOWN)	November 1894
	Fortune	(UNKNOWN)	March 1895
	Fortune	(UNKNOWN)	October 1895
E.A. Bartezki Amusement Company, St. Louis, MO	Athletic	COMBINATION WEIGHER AND SPIROMETER	February 1905
Peter Beetz, New York, NY	Athletic	STRENGTH TEST	April 1888
	Athletic	MUSCLE DEVELOPER ("Push Pull")	December 1888
	Athletic	NEW STRENGTH TEST	1904
	Athletic	OVER THE FENCE	April 1905
	Athletic	IMPROVED GRIP MACHINE	June 1905

	Athletic	HERCULES	1905
Michael Benedict, Newark, NJ/New York, NY	Dispenser	WINDMILL	June 1897
	Athletic	LUNG TESTER	March 1902
	Dispenser	PERFUME	1904
	Fortune	HOROSCOPE CARD VENDER	1905
Paul E. Berger Manufacturing Company, Chicago, IL	Fortune	THE MAGIC FORTUNE TELLER	1899
	Athletic	LIFT AND HAND TEST	1900
	Peep Show	SAPHO	September 1900
	Peep Show	REGINASCOPE	1900
	Peep Show	AUTOMATIC SAPHO	1901
	Peep Show	QUARTROSCOPE	June 1901
	Shocker	ELECTRICIAN	1902
Best Novelty Company, Hartford, CT	Fortune	WIZARD	April 1903
Beverly Machine Company, Beverly, MA	Athletic	STANDARD GRIP TESTING MACHINE (John L. Sullivan) "Strong Boy"	November 1894
Bierman Auto Machine Company, Milwaukee, WI	Exhibition	MINIATURE CITY	1905
	Exhibition	WORKING WORLD	1905
	Exhibition	BUSBY MINE	1905
	Exhibition	JOHNSTOWN FLOOD	1905
	Exhibition	MYSTIC CITY	1905
	Exhibition	HOLY CITY	1905
Edward T. Birdsall, New York, NY	Exhibition	THEATRICAL SHOW	August 1890
Charles C. Bishop And Company, St. Louis, MO	Peep Show	TRI-O-GRAPH	November 1889
Charles G. Bissel & Company, Chicago, IL	Fortune	ELECTRO-SCOPE	April 1905
	Fortune	FUTURE SCOPE	1905
	Fortune	MERRY WIDOW FUTURE SCOPE	1905
	Fortune	FUTURE PHOTO	1905
	Fortune	FORTUNE	1905
John Feggetter Blake, New Haven, CT	Athletic	SPIROMETER	February 1889
	Peep Show	STEREOPTICON	April 1889
John F. Blake, New Haven, CT	Athletic	SPIROMETER	1898
Blauvelt Manufacturing Company, Brooklyn, NY	Exhibition	DANCE MACABRE	May 1890
Bolte Company, New York, NY	Peep Show	3-IN-1	April 1905
Morris Borsodi, New York, NY	Vibrator	AUTOMATIC VIBRATING MACHINE	May 1905
Bower's Automatic Machine Company, Chicago, IL	Athletic	WEIGHING AND STRENGTH TESTING MACHINE	March 1889
	Athletic	AUTOMATIC LUNG TESTER	October 1889
Bower Machine Company, Chicago, IL	Athletic	COMBINATION SCALE	February 1894
Franklin B. Bradley, Bridgeport, CT	Amusement	BASE BALL	August 1889
John J. Bradley, Philadelphia, PA	Amusement	MYSTIFYING SLOT MACHINE	March 1897
Frank Bronori, Bennington, VT	Peep Show	(UNKNOWN)	November 1900
Bronson And Melich, Minneapolis, MN	(Unknown)	(UNKNOWN)	1903
George W. Brown, Colorado Springs, CO	Peep Show	(UNKNOWN)	April1895
Bullock Electric Manufacturing Company, Detroit, MI	Peep Show	(UNKNOWN)	June 1905
J. Burt, New York, NY	Amusement	PRIZE FIGHTERS	May 1903
James W. Burton, Cleveland, OH	Photograph	PHOTOGRAPHIC APPARATUS	April 1893
Caille Company, Detroit, MI	Athletic	(UNKNOWN)	1897
Caille Brothers Company, Detroit, MI	Shocker	SHOCKO	August 1901
	Athletic	GRIP-TEST	August 1901
	Peep Show	AUTOMUTO	1901
	Peep Show	JEWEL	1901
	Athletic	(COUNTER) SIMPLEX	1902
	Athletic	SIMPLEX	1902
	Athletic	COUNTER HERCULES	1902
	Athletic	HERCULES	1902
	Stamper	ALUMINUM NAME PLATE	November 1902
	Athletic	PUNCHING MACHINE ("Olympic")	1902
	Athletic	LIFTING MACHINE	April 1903
	Athletic	OLYMPIC	January 1904
	Athletic	AJAX	January 1904
	Athletic	SAMSON	April 1904
	Athletic	SAMSON LIFTER (Export)	1904

Caille Brothers Company, Detroit, MI (continued)			
	Peep Show	AUTO-MUTO	1904
	Athletic	AJAX PUSH AND DOUBLE GRIP	1904
	Peep Show	CAIL-O-SCOPE	1904
	Athletic	TUG-O-WAR ("Cabinet Style")	June 1904
	Athletic	TUG-O-WAR ("Platform Style")	June 1904
	Athletic	PUNCHING-BAG	August 1904
	Athletic	LITTLE MARVEL	1904
	Athletic	LITTLE WONDER	1905
	Peep Show	STEREO-STYLE	February 1905
	Peep Show	IMPERIAL	April 1905
	Athletic	ELECTRIC COMBINATION BLOW AND GRIP	April 1905
	Athletic	COUNTER COMBINATION BLOW AND GRIP	April 1905
	Athletic	MASCOT ELECTRIC TOWER GRIP	May 1905
	Athletic	MASCOT ("Floor Style")	May 1905
	Athletic	HYGIENIC ("Pedestal Style")	May 1905
	Athletic	HYGIENIC ("Cabinet Style")	May 1905
	Athletic	EUREKA	1905
	Target	CAIL-O-SCOPE PISTOL	1905
	Peep Show	CAIL-O-PHONE	1905
Caille-Richards Company, Union City, MI	Athletic	LION, JR.	1901
Caille Schiemer Company, Detroit, MI	Athletic	WALL PUNCHER	1901
	Athletic	PUNCHING BAG	August 1904
Caille-Sinard Company, Detroit, MI	Peep Show	(UNKNOWN)	1904
Cain Cabinet Company, New York, NY	(Unknown)	(UNKNOWN)	1901
Charles M. Campbell, Washington, DC	Peep Show	AMERICAN PARLOR KINETOSCOPE	June 1896
Leo Canda Company, Cincinnati, OH	Peep Show	PICTURE MACHINE	February 1900
	Peep Show	COUNTER PICTURE MACHINE	July 1900
	Peep Show	PICTURE EXHIBITOR	January 1901
Leo Canda Manufacturing Company, Cincinnati, OH	Peep Show	PICTURE MACHINE	January 1903
	Peep Show	COUNTER PICTURE MACHINE	January 1903
	Peep Show	PICTURE EXHIBITOR	January 1903
	Athletic	PUNCHING MACHINE	1903
	Athletic	LIFTING MACHINE	1903
	Card Vender	SOUVENIR POST CARD	1903
	Vibrator	DOCTOR VIBRATOR	May 1905
E.A. Cannon Toy Company, Green Bay, WI	Athletic	AUTOMATIC SEE-SAW	1900
	Athletic	AUTOMATIC RIDING HORSE	1901
Henry Chapin, New York, NY	(Unknown)	(UNKNOWN)	1901
Chicago Novelty Supply House, Chicago, IL	Peep Show	STEREOSCOPE	June 1905
Chicago Projecting Company, Chicago, IL	Peep Show	IMPROVED OPTIGRAPH MODEL 1900	July 1899
Chicago Recording Scale Company, Waukegan, IL	Peep Show	MAGNI-SCOPE (non-coin)	June 1897
Clawson Machine Company, Newark, NJ	Exhibition	MECHANICAL AUTOMATON	1897
	Peep Show	AMERICAN PARLOR KINETOSCOPE (non-coin)	1896
	Peep Show	AMERICAN PARLOR KINETOSCOPE (non-coin) "Visible"	1898
Clawson Slot Machine Company, Newark, NJ	Athletic	ATHLETIC REGISTER	1893
Coin Cabinet Company, New York, NY	Peep Show	COIN CABINET	June 1900
	Athletic	THE WINNER	July 1900
Coin Controlled Health Exercising Machinery Company, Chicago, IL	Athletic	HEALTH EXERCISING MACHINE	1891
Coin Operated Machine Company, New York, NY	(Unknown)	(UNKNOWN)	1902
Colby Electrical Specialty Company, Chicago, IL	Shocker	AUTOMATIC ELECTRIC BATTERY	May 1888
	Athletic	AUTOMATIC SPIROMETER	July 1888
	Shocker	COMBINATION BATTERY	October 1889
Colby International Manufacturing Company, Chicago, IL	Athletic	COMBINATION TESTING MACHINE	November 1887
	Athletic	TESTING MACHINE	August 1888

Colby Specialty Manufacturing Company, Chicago, IL	Athletic	COMBINATION LUNG TESTER	1894
Colby Specialty Supply Company, Chicago, IL	Athletic	COMBINATION LUNG TESTER	1892
Colby Testing Machine Company, Chicago, IL	Athletic	COMBINATION TESTING MACHINE	October 1888
	Athletic	TESTING MACHINE	October 1888
Colby Testing Machine Manufacturing Company, Chicago, IL	Athletic	TESTING MACHINE	1895
Colt and Company, Philadelphia, PA	Peep Show	1900 CINEOGRAPH (non-coin)	1900
	Peep Show	CRITERIOSCOPE (non-coin)	1901
	Peep Show	GRAPHOSCOPE (non-coin)	1901
Columbia Novelty Manufacturing Company, Chicago, IL	Shocker	COIN ELECTRIC BATTERY	1898
Columbia Auto-Machine Company, New York, NY	(Unknown)	(UNKNOWN)	1903
Columbia Automatic Machine Company, New York, NY	(Unknown)	(UNKNOWN)	1901
Columbian Machine Company, New York, NY	(Unknown)	(UNKNOWN)	1901
Combination Scale Company, Chicago, IL	Athletic	COMBINATION SCALE	March 1889
	Athletic	AUTOMATIC SPIROMETER	February 1891
Commercial Manufacturing Company, Inc., Baltimore, MD	Peep Show	(UNKNOWN)	April1902
Consolidated Machine Company, Philadelphia, PA	Card Vender	SOUVENIR	1904
Consolidated Slot Machine Company, Philadelphia, PA	(Unknown)	(UNKNOWN)	1904
Henry Cooper, Jersey City, NJ	Athletic	STRIKING MACHINE	April 1889
Cosmopolitan Novelty Company, Philadelphia, PA	Card Vender	LOVER'S POSTOFFICE	July 1903
	Athletic	EXCELSIOR WATER BLOWER	1903
	Card Vender	FUTURE HUSBAND AND WIFE	May 1904
	Fortune	VICTOR	May 1904
	Card Vendor	FUTURE HAPPY HOME	1905
Cowper Manufacturing Company, Chicago, IL	Athletic	PUNCHING MACHINE	1904
	Athletic	LIFTING MACHINE	1904
	Athletic	GRIP MACHINE	1904
	Athletic	STRENGTH TEST MACHINE	1904
Coyle And Rogers, Washington, DC	Target	SHOOTING GALLERY	August 1889
	Amusement	AUTOMATIC RACE COURSE	January 1890
Crosby Steam Gage and Valve Company, Boston, MA	Athletic	HAND POWER TEST	September 1888
Jacob Curl, Newark, NJ	(Unknown))	(UNKNOWN)	1894
John Dawson Company, Louisville, KY	Shocker	PHYSICIAN'S BATTERY	November 1896
Delaney And Dysard, Hammond, IN	Athletic	LUNG TESTER	May 1893
Edmund De Moulin And Brother, Greenville, IL	Athletic	LIFTING MACHINE	1900
	Athletic	IMPROVED LIFTING AND SPANKING MACHINE	1901
	Athletic	PATENT LUNG TESTER	July 1901
	Athletic	TEST YOUR GRIP	1902
Detroit Brass and Iron Novelty Company, Detroit, MI	Shocker	MEDICAL BATTERY	December 1897
	Shocker	ELECTRIC TREATMENT	June 1901
Detroit Medical Battery Company, Detroit, MI	Shocker	PEERLESS	1901
	Shocker	MEDICAL BATTERY	1902
J. DeVantary Company, Brooklyn, NY	Athletic	HAND POWER TEST	February 1888
Leon Donne, Chicago, IL	Athletic	LIFTING MACHINE	December 1889
	Athletic	LUNG TESTER	June 1891
Dunham Machine Company, New York, NY	(Unknown)	(UNKNOWN)	1901
Edison Laboratories, West Orange, NJ	Peep Show	KINETOSCOPE NO. 1	October 1889
	Peep Show	KINETOSCOPE	August 1891
	Peep Show	STEREO KINETOSCOPE	August 1891
	Peep Show	IMPROVED KINETOSCOPE	1893
Edison Manufacturing Company, Orange, NJ	Peep Show	KINETOSCOPE	January 1894
	Peep Show	SPECIAL KINETOSCOPE	July 1894
	Peep Show	MUSICAL KINETOSCOPE	1894
	Peep Show	KINETOPHONE	1895
	Peep Show	VITASCOPE (non-coin)	March 1896
	Peep Show	PROJECTING KINETOSCOPE (non-coin)	1900
	Peep Show	1901 PROJECTING KINETOSCOPE (non-coin)	1901
	Peep Show	EXHIBITION KINETOSCOPE	1903

	Peep Show	UNIVERSAL KINETOSCOPE		1904
	Amusement	X-RAY MACHINE		1904
Electric Advertising Scale Company, Chicago, IL	Exhibition	POWER STATION	March	1889
	Exhibition	STEAMBOAT	August	1889
	Peep Show	MAGNI-SCOPE (non-coin)		1895
Elias Automatic Slot Machine Company, Philadelphia, PA	(Unknown)	(UNKNOWN)		1899
Robert C. Elliott, Prairie Creek, IN	Peep Show	(UNKNOWN)	November	1982
Enjalbert, (Location Unknown)	Photograph	AUTOMATIC PHOTOGRAPHY		1889
Empire Novelty Manufacturing Company, Chicago, IL	Fortune	FUTURE-SCOPE		1898
Enterprise Optical Manufacturing Company, Chicago, IL	Peep Show	1900 IMPROVED OPTIGRAPH (non-coin)		1899
	Peep Show	OPTIGRAPH WITH STEREOPTICON (non-coin)		1901
Enterprise Vending Machine Company, Inc., Chicago, IL	Shocker	THE DIAMOND		1902
	Athletic	STRENGTH TEST MACHINE	June	1902
Farrell And Toohey, New Britain, CT	Peep Show	PHOTO STEROPSCOPE	January	1900
William R. Fearn, Camden, NJ	Information	QUESTION AND ANSWER MACHINE	September	1890
Federal Automatic Machine Company, New York, NY	(Unknown)	(UNKNOWN)		1902
Fisher Specialty Manufacturing Company, Minneapolis, MN	Photograph	AUTOMATIC PHOTOGRAPH MACHINE	August	1889
	Photograph	AUTOMATIC CAMERA	March	1890
J.A. Flynn, Newark, NJ	Athletic	SLOT PUNCHING BAG	November	1904
Fortune Machine Company, Chicago, IL	Fortune	FORTUNE TELLING MACHINE	October	1903
Fortune Machine Works, Chicago, IL	Fortune	FORTUNE TELLING MACHINE	November	1903
	Fortune	WHEEL OF FATE		1904
William F. Freeman, New York, NY	Photograph	WELSH'S NICKEL-IN-THE-SLOT PHOTOGRAPH MACHINE		1892
Freeport Novelty Company, Freeport, IL	Peep show	JEWEL ILLUSTRATED SONG MACHINE		1904
	Exhibition	MUSICAL ELECTRIC MOVING FIGURE		1904
Furman And Heissenburger, New York, NY	(Unknown)	(UNKNOWN)		1902
J.H. Garber, Webster, MA	Athletic	ELECTRIC LIGHT BLOWING MACHINE		1903
	Athletic	LAMPLIGHTER LUNG TESTER		1903
Garretson Brothers, Buffalo, NY	Information	(UNKNOWN)	May	1896
John. H. Gasser Manufacturing Company, Webster, MA	Athletic	ELECTRIC LIGHT BLOWING MACHINE	June	1903
	Athletic	LAMPLIGHTER LUNG TESTER		1903
Rudolph E. Gatter, New York, NY	Bowling	AUTOMATIC BOWLING ALLEY	July	1902
Gattolliat And Bornand, Jersey City, NJ	Athletic	STRENGTH TESTER	June	1901
Gillet, Hunter And Company, Springfield, IL	Athletic	AUTOMATIC SPIROMETER	October	1888
H.P. Gilette, Rochester, NY	(UNKNOWN)	(UNKNOWN)	December	1901
Globe Novelty Works, Beaver, PA	Athletic	WATER LUNG TESTER		1904
Eugene F. Glock, Detroit, MI	Peep Show	ILLUSTRATED SONG MACHINE	January	1904
James F. Goodridge, Boston, MA	Peep Show	ILLUSTRATED DIALOGUE MACHINE	July	1889
Great America Automatic Machine Company, New York, NY	(Unknown)	(UNKNOWN)		1902
M.O. Griswold And Company, Rock Island, IL	Peep Show	PANORAMA	May	1891
	Peep Show	AUTOMATIC PANORAMA		1891
	Peep Show	THE AUTOSCOPE		1895
Grove, Curry, Merrill & Hills, Washington, DC	Athletic	INDICATING LUNG-TESTER	July	1902
Louis G. Grund, Philadelphia, PA	(Unknown)	(UNKNOWN)		1904
W.H. Habbeler And Company, Chicago, IL	Athletic	LUNG TESTER	September	1897
Louis Hammerschlag, Philadelphia, PA	Amusement	CATHOSCOPE		1904
Hand Power Test Machine Company, New York, NY	Athletic	HAND POWER TEST CIGAR MACHINE	April	1887
	Athletic	HAND POWER TEST	February	1888
Harbach And Company, Philadelphia, PA	Peep Show	AMERICAN CINEOMATOGRAPH (non-coin)	March	1898
Newton W. Hartwell Company, Louisville, KY	Information	AUTOMATIC MEASURING MACHINE	April	1888
Harvard Supply Company, Buchanan, MI	Peep Show	PENNY PICTURE MACHINE	June	1904
Luthur D. Haskell, Jr., Salem, MA	Athletic	PUNCHING MACHINE	February	1897
	Athletic	JOHN L. SULLIVAN		1898

Joseph W. Hazell, Baltimore, MD	Shocker	(UNKNOWN)	January 1888
Health Lift And Exercising Machine Company, Chicago, IL	Athletic	HEALTH LIFT	December 1889
	Target	AUTOARM PISTOL	1890
	Athletic	CENT-A-TEST	June 1891
John Heissenberger, New York, NY	Peep Show	AUTOMATIC PICTURE EXHIBITOR	August 1898
	Athletic	TEST YOUR STRENGTH	May 1903
Himebaugh Manufacturing Company, Philadelphia, PA	Shocker	ELECTRICIAN	1902
	Athletic	SPIROMETER	1903
	Fortune	12 SLOT FORTUNE TELLER	1904
Philip J. Hogan, Neguanee, MI	Fortune	THE COLUMBIAN CONJECTOR	1893
Holmes And Wakefield, Chicago, IL	Athletic	BLOW TESTING MACHINE	February 1889
Home Novelty Company, Cincinnati, OH	(Unknown)	(UNKNOWN)	1899
F.J. Howard, Boston, MA	(Unknown)	(UNKNOWN)	1901
	Athletic	THE HAND-SHAKE	1904
	Card Vendor	LOVE LETTER	1904
Howard And Scheafe, Boston, MA	(Unknown)	(UNKNOWN)	1898
Howland Manufacturing Company, New York, NY	Amusement	AGE INDICATOR	November 1888
Idea Novelty Manufacturing Company, Grand Rapids, MI	(Unknown)	SLOT MACHINE	1894
Illustrosa Machine Company, New York, NY	Peep Show	ILLUSTROSA	1903
International Automatic Machine Company, Cincinnati, OH	Dispenser	(UNKNOWN)	1892
International Novelty Company, Council Bluffs, IA	Peep Show	COIN KINETOSCOPE	September 1894
International Stereo Optical Picture Company, Philadelphia, PA	Peep Show	(UNKNOWN)	1899
J. James Manufacturing Company, Fort Scott, KS	Athletic	NICKEL SLOT STRIKER	June 1902
Charles Francis Jenkins, Washington, DC	Peep Show	IMPROVED KINETOSCOPE	November 1894
Kansas City Talking Machine Company, Kansas City, MO	Peep Show	ANIMATOGRAPH (non-coin)	July 1898
	Peep Show	PEEPOSCOPE	1899
Joseph G. Kearney, San Francisco, CA	Athletic	LIFTING MACHINE	May 1888
Keller And Wiegand, Great Falls, MT	Target	(UNKNOWN)	March 1900
Kelly And Labar, Minneapolis, MN	(UNKNOWN)	(UNKNOWN)	1903
Kern Brothers, Chicago, IL	Athletic	LUNG TESTER	January 1893
Kernan Manufacturing Company, Chicago, IL	Athletic	LUNG TESTER AND DICE SHAKING MACHINE	1901
	Peep Show	AUTOSCOPE	1904
Keystone Automatic Company, Philadelphia, PA	Athletic	LIFTING MACHINE	February 1902
	Athletic	PUNCHING MACHINE	March 1902
The Kinetoscope Company, Chicago, IL	Peep Show	KINETOSCOPE	April 1894
	Peep Show	COIN KINETOSCOPE	May 1894
	Peep Show	MUSICAL KINETOSCOPE	1894
	Peep Show	KINETOPHONE	April 1895
	Peep Show	VITASCOPE (non-coin)	March 1896
	Peep Show	HAND KINETOSCOPE	1897
	Peep Show	HAND KINETOSCOPE MODEL NO. 2	1898
Kinetoscope Exhibition Company, New York, NY	Peep Show	SPECIAL KINETOSCOPE	August 1894
Kleine Optical Company, Chicago, IL	Peep Show	STEREOPTICON (non-coin)	1895
M.S. Kline, Buffalo, NY	Photograph	THE PHOTOSCOPE	1904
	Photograph	1905 PHOTOSCOPE	April 1905
K.M.C.D Syndicate, New York, NY	Peep Show	MUTOSCOPE	1895
	Peep Show	AMERICAN BIOGRAPH (non-coin)	October 1896
George W. Koch, Philadelphia, PA	(Unknown)	(UNKNOWN)	1896
M. Kollman Company, Inc., San Francisco, CA	Peep Show	(UNKNOWN)	July 1896
Lambda Company, Inc., New York, NY	Peep Show	PANTOPTICON (non-coin)	April 1895
George H. LaPorte, Brooklyn, NY	Exhibition	NIAGARA FALLS	February 1902
Henry C. Lavery, Superior, WI	Stamper	STAMPING PRESS	December 1902
	Fortune	LAVERY PHRENOMETER	July1904
Lehigh Novelty Company, Philadelphia, PA	Shocker	FAN	1901
	Fortune	MEPHISTO	1904
	Shocker	ELECTRIC HORSESHOE	1904

	Fortune	AGE TELLING SLOT MACHINE	1905
	Shocker	THOMAS EDISON ELECTRIC POCKET MACHINE	1905
Norman Lichty Manufacturing Company, Des Moines, IA	Fortune	AUTOMATIC PHRENOLOGIST	October 1893
C.R. Light and Company, San Francisco, CA	(Unknown)	(UNKNOWN)	1904
John Lighton Machine Company, Syracuse, NY	Athletic	TEST LIFTING MACHINE	March 1888
	Athletic	JOHN LIGHTON TEST LIFTING MACHINE	August 1888
	Athletic	AUTOMATIC GYMNASIUM	May 1889
	Athletic	JOHN LIGHTON'S LIFTING MACHINE	1892
	Athletic	GRIPO-PHONE	1893
John Little, Minneapolis, MN	(Unknown)	(UNKNOWN)	1905
Robert H. Little, Chicago, IL	Automaton	(UNKNOWN)	November 1890
	Automaton	THE DRINKER	April 1902
	Automaton	LADY	April 1902
S. Lubin, Philadelphia, PA	Peep Show	1898 CINEOGRAPH AND STEREOPTICON (non-coin)	March 1898
Edwin J. Lumley, Washington, DC	Amusement	HORSE RACING MACHINE	August 1889
Louis Maas, New Haven, CT	Athletic	LUNG TESTER	January 1899
John G. MacPherson, Buffalo, NY	Peep Show	AUTOMATIC PICTURE EXHIBITOR	April 1898
Manhattan Automatic Machine Company, New York, NY	(Unknown)	(UNKNOWN)	1901
Horace A. Manley And Company, Boston, MA	Information	ADVERTISING MACHINE	August 1893
	Information	IMPROVED ADVERTISING MACHINE	October 1893
	Information	INFORMATION MACHINE	October 1894
	Information	(UNKNOWN)	March 1896
Pete Marquart, Brooklyn, NY	Target	PISTOL	July 1902
Marshfield Novelty Company, Minneapolis, MN	Athletic	PUNCHING MACHINE	August 1902
	Athletic	STRENGTH TEST	August 1902
	Athletic	LIFTER	August 1902
Marvin And Casler Company, Canastota, NY	Peep Show	MUTOSCOPE MODEL A	1896
	Peep Show	MUTOSCOPE MODEL B	1898
	Peep Show	MUTOSCOPE MODEL C	1899
	Peep Show	MUTOSCOPE MODEL D	1899
	Stamper	NAME-PLATE MACHINE	July 1901
	Peep Show	MUTOSCOPE MODEL DL	1902
	Peep Show	ILLUSION	1902
	Information	PALM READER	April 1905
	Information	NEW PALM READER	September 1905
John Mattson, Revere, MA	Shocker	(UNKNOWN)	July 1895
McCullom And Beckwith, Minneapolis, MN	Athletic	LUNG TESTER	May 1893
W. Meakin Machine Company, San Francisco, CA	Athletic	LIFTING MACHINE	1896
Wm. Meakin And J.G. Kearney , San Francisco, CA	Athletic	LIFTING MACHINE	1889
Medina Manufacturing Company, Medina, NY	Athletic	SPIROMETER	1901
	Shocker	SHOCKER	1901
	Fortune	WIZZARD	1902
Menzenhaver Guitar-Zither Company, Jersey City, NJ	Target	(UNKNOWN)	September 1897
Helmuth Messmann, Chicago, IL	Athletic	STRENGTH TESTER	December 1900
Metropolitan Automatic Machine Company, New York, NY	Bowling	AUTOMATIC BOWLING ALLEY	1903
Metropolitan Specialty Company, New York, NY	Peep Show	PROFESSIONAL OPTIGRAPH (non-coin)	February 1901
	Peep Show	POLYSCOPE (non-coin)	September 1901
Michigan Phonograph Company, Grand Rapids, MI	Amusement	VITAPHONE	1898
Midland Manufacturing Company, Chicago, IL	Athletic	LUNG TESTER AND DICE SHAKING MACHINE	February 1899
	Shocker	ELECTRICITY IS LIFE	April 1899
	Shocker	ELECTRIC TREATMENT MACHINE	April 1899
	Athletic	NEW CENTURY STRENGTH TEST MACHINE	December 1900
	Athletic	LUNG TESTING MACHINE	October 1902

John B. Miller, Mount Vernon, OH
F. W. Mills Manufacturing Company, Hoboken, NJ

Mills Novelty Company, Chicago, IL

Athletic	AUTOMATIC BLOW REGISTER	May 1893
Peep Show	PHONO-ARTOSCOPE	March 1900
Peep Show	TOD SLOAN	April 1900
Shocker	ZAZA	June 1900
Shocker	ELECTRIC SHOCK MACHINE	June 1900
Athletic	THE KNOCKER	December 1901
Athletic	THE BOOSTER	December 1901
Athletic	YOUNG CORBETT	December 1901
Athletic	OWL LIFTER	October 1899
Shocker	ELECTRIC SHOCK MACHINE	December 1899
Target	MANILA	January 1900
Peep Show	PHONOARTOSCOPE	January 1900
Athletic	NEW OWL LIFTER	June 1900
Shocker	IMPERIAL ("Cities")	June 1900
Shocker	ELECTRICITY IS LIFE	July 1900
Peep Show	SAPHO QUARTOSCOPE	July 1900
Peep Show	NEW QUARTOSCOPE	January 1901
Athletic	NEW OWL SEARCHLIGHT LIFTER	1901
Athletic	NEW OWL CHIMES LIFTER	1901
Peep Show	IMPROVED QUARTOSCOPE	November 1901
Athletic	LITTLE KNOCKER	January 1902
Shocker	IMPERIAL ("Girl")	1902
Athletic	NEW LIFTING MACHINE	February 1902
Athletic	PUNCHING MACHINE	March 1902
Athletic	PUNCHING MACHINE (Cabinet)	April 1902
Athletic	NEW PUNCHING MACHINE	June 1902
Athletic	OWL DUMB-BELL LIFTER	1902
Dispenser	WINDMILL	1902
Stamper	NAME PLATE MACHINE	December 1902
Athletic	1903 COMBINATION PUNCHING MACHINE	December 1902
Athletic	1903 LITTLE KNOCKER	1903
Athletic	PNEUMATIC PUNCH MACHINE	April 1903
Athletic	1903 NEW LIFTING MACHINE	1903
Fortune	SUCCESS FORTUNE TELLER	June 1903
Fortune	JUMBO SUCCESS FORTUNE TELLER	June 1903
Fortune	CHICAGO FORTUNE	1903
Athletic	BAG PUNCHING MACHINE	December 1903
Peep Show	QUARTOSCOPE JR. (UNIT QUARTOSCOPE)	December 1903
Athletic	GRIP AND LUNG TESTER	December 1903
Athletic	SEARCHLIGHT GRIP AND LUNG TESTER	December 1903
Athletic	ELECTRIC CHIMES GRIP AND LUNG TESTER	December 1903
Athletic	1904 PNEUMATIC PUNCHING MACHINE	December 1903
Athletic	NEW IMPROVED LIFTING MACHINE	December1903
Athletic	SEARCHLIGHT LIFTER	December 1903
Athletic	ELECTRIC CHIMES LIFTER	December 1903
Athletic	IMPROVED COMBINATION PUNCHER	December 1903
Stamper	EMBLEM EMBOSSING MACHINE	February 1904
Athletic	1904 NEW LIFTING MACHINE	March 1904
Athletic	VERTICAL PUNCHER	1904
Athletic	HAT BLOWER	1904
Exhibition	HOOCHIE COOCHIE	1904
Peep Show	CABINET UNIT PICTURE MACHINE	1904
Fortune	LITTLE MIDGET	1904
Peep Show	UNIT PICTURE MACHINE	1904
Peep Show	AUTO STEREOSCOPE	1904
Athletic	ELECTRIC LIFTING MACHINE	May 1904

Amusement	ILLUSION	1904
Athletic	1904 COMBINATION PUNCHING MACHINE	1904
Athletic	RUBBER NECK	1904
Fortune	PUSS IN BOOTS	1904
Athletic	HIGH BALL LUNG TESTER	1904
Athletic	LION HEAD LUNG TESTER	1904
Peep Show	1904 IMPROVED QUARTOSCOPE	1904
Amusement	FISH POND	1904
Target	TARGET SHOOTING	1904
Amusement	STEIN ELECTRICAL GAME	1904
Amusement	SPIRIT WRITER	1904
Amusement	JAPANESE BOOTH	1904
Target	AUTOMATIC RIFLE RANGE	1904
Fortune	WIZARD	1904
Athletic	WEIGHT BLOWER	1904
Athletic	IMPROVED RUBBERNECK	1904
Peep Show	ILLUSTRATED SONG MACHINE (Cylinder)	May 1904
Vibrator	DOCTOR VIBRATOR	1904
Athletic	BALLOON LUNG TESTER	1904
Athletic	SUBMARINE LUNG TESTER	1904
Dispenser	PERFUME SPRAYING MACHINE	1904
Athletic	DUMB BELL LIFTER	1904
Card Vender	CUPID'S POST OFFICE	1904
Fortune	ORACLE LETTER WRITER	1904
Fortune	PALMISTRY	1904
Photograph	AUTOMATIC PHOTOGRAPH MACHINE	1904
Athletic	IMPROVED BAG PUNCHING MACHINE	December 1904
Athletic	1905 HAT BLOWER	December 1904
Peep Show	THE MUTOSCOPE	1905
Fortune	LADY FORTUNE TELLER	1905
Press	ROOVERS NAME PLATE MACHINE	1905
Athletic	SKYSCRAPER LUNG TESTER	1905
Shocker	ELECTRICITY	1905
Peep Show	ILLUSTRATED SONG MACHINE (Disc)	February 1905
Peep Show	1905 QUARTOSCOPE	1905
Athletic	1905 BALLOON LUNG TESTER	1905
Card Vender	SOUVENIR POSTAL CARD MACHINE	April 1905
Peep Show	1905 AUTOSTEREOSCOPE	April 1905
Card Vender	1905 CUPID'S POST OFFICE	April 1905
Fortune	HOROSCOPE	April 1905
Fortune	CONJURER	April 1905
Athletic	REWARD PAYING BAG PUNCHER	1905
Dispenser	MINIATURE PERFUME SPRAYER	1905
Athletic	SQUEALING PIG	January 1897
Athletic	BRAYING GOAT	August 1897

John Milo, Williamsbridge, NY

Charles Molitor Novelty Manufacturing Company, Chicago, IL

Peep Show	MUTOSCOPE	1900
Athletic	PUNCHING BAG	June 1902
Peep Show	(UNKNOWN)	1902
Exhibition	MICROSCOPIC CYCLORAMA	November 1889
Fortune	ARROW	1901
Peep Show	(UNKNOWN)	May 1905
(Unknown)	(UNKNOWN)	1895
Amusement	RACING CONTEST	June 1889
Amusement	HORSE RACE	August 1890
(Unknown)	(UNKNOWN)	1896
Peep Show	(UNKNOWN)	March 1895
Peep Show	AUTOMATIC ELECTRIC LIVING PICTURE MACHINE	1896

Molyneux Experimenting Company, Minneapolis, MN
Monitor Clock Company, Medina, NY
Walter Morris, Wichita, KS
Muir Novelty Works, Muir, MI
Murdock And Murdock, Washington, DC

Nadeau And Company, Minneapolis, MN
Samuel Nafew Company, New York, NY

	Athletic	AUTOMATIC LUNG TESTER	1896
	Peep Show	HAND KINETOSCOPE	1896
	Peep Show	PROJECTOR (Non-coin)	1897
	Peep Show	PICTURE EXHIBITOR	August 1899
National Automatic Company, Philadelphia, PA	(Unknown)	(UNKNOWN)	1904
National Automatic Fire Alarm Company, New Orleans, LA	(Unknown)	(UNKNOWN)	January 1902
National Automatic Machine Company, Brooklyn, NY	Athletic	LIFT, GRIP AND FINGER TEST	January 1891
	Athletic	PUNCH	January 1891
National Automatic Machine Company, Brooklyn, NY	Athletic	PUNCHING MACHINE	October 1901
National Automatic Machine Company, Philadelphia, PA	(Unknown)	(UNKNOWN)	1896
National Automaton Company, Washington Court House, OH	Amusement	THE ELECTRICAL SHELL MAN	February 1893
	Amusement	THE MECHANICAL PUZZLE	1893
National Cosmorama Company, New Haven, CT	Peep Show	COSMORAMA	1899
	Peep Show	STEREOPHONE	April 1899
National Electric Machine, New York, NY	Shocker	(UNKNOWN)	August 1887
	Photograph	(UNKNOWN)	January 1888
	Shocker	ELECTRIC MACHINE	April 1888
	Shocker	IMPROVED ELECTRIC MACHINE	August 1892
	Shocker	NERVE INVIGORATOR	1896
National Novelty Company, Minneapolis, MN	Athletic	WALL PUNCHER	October 1899
	Athletic	COMBINATION STRENGTH TESTER	1901
	Athletic	SQUEEZE AND GRIP	1907
National Patent Company, New York, NY	Peep Show	AUTOMATIC MAGIC LANTERN	June 1903
National Photograph Machine Company, New York, NY	Photograph	PORTABLE PHOTOGRAPH MACHINE	1899
National Spirometer Company, Medina, NY	Athletic	SPIROMETER	1897
	Shocker	PEERLESS BATTERY	1898
	Shocker	AUTOMATIC MEDICAL BATTERY	1903
National X-Ray Company, New York, NY	Amusement	X-RAY MACHINE	1903
Peiir Prisco Nelson, New York, NY	Bowling	ELECTRIC BOWLING-ALLEY	September 1892
T.J. Nertney Manufacturing Company, Ottawa, IL	Peep Show	HAND KINETOSCOPE	June 1896
	Peep Show	HAND KINETOSCOPE NO. 2	1898
	Peep Show	NERTNEY PROJECTOR (non-coin)	1899
New England Manufacturing Company, Southington, CT	Shocker	ELECTRICITY IS LIFE	1897
	Athletic	TEST YOUR STRENGTH	April 1900
New York Coin Operated Machine Company, New York, NY	(Unknown)	(UNKNOWN)	1904
New York Export Company, New York, NY	Shocker	EDISON ELECTRIC MAN	1904
	Athletic	UNCLE SAM	July 1904
	Athletic	HATBLOWING MACHINE	July 1904
	Fortune	FORTUNA	July 1904
	Vibrator	DOCTOR VIBRATING MACHINE	1905
New York Slot Machine Company, New York, NY	Peep Show	AMERICAN PENNY PICTURE	May 1899
Richard Norris, Pittsburgh, PA	Athletic	NOVELTY PUNCHING BAG	September 1902
	Bowling	NOVELTY BOWLING ALLEY	January 1904
	Athletic	NOVELTY EXERCISER	March 1904
	Fortune	NOVELTY FORTUNE TELLER	January 1905
	Athletic	AUTOMATIC PUNCHING BAG	February 1905
North American Novelty Company, Minneapolis, MN	(Unknown)	(UNKNOWN)	1903
North American Phonograph Company, New York, NY	Peep Show	KINETOSCOPE	1892
Northwestern Novelty Company, Minneapolis, MN	Automaton	(UNKNOWN)	1900
Novelty Company, Philadelphia, PA	Athletic	HIT THE COON!	March 1903
Novelty Punching Machine Company, Chicago, IL	Athletic	PUNCHING MACHINE	August 1902
	Athletic	PUNCHING BAG	May 1903
Daniel O'Brien, Newark, NJ	(Unknown)	(UNKNOWN)	1893
Thomas F. O'Connor, New York, NY	Athletic	BLOW TESTER	February 1888
Ogden And Company, Chicago, IL	Shocker	ELECTRICITY	1897
	Shocker	PEERLESS	1897
	Shocker	AUTOMATIC MEDICAL BATTERY	1897
	Peep Show	AUTOSCOPE	1899
	Athletic	PUNCHER	1899

O'Kelly And Company, New York, NY	Athletic	ELECTRIC HORSESHOE	1901
Optical Amusement Company, Philadelphia, PA	Shocker	FAN ELECTRIC SHOCK	1901
Optical Novelty Company, New Haven, CT	Peep Show	THE MANHATTAN	1901
William Ostrander And Company, Philadelphia, PA	Peep Show	JEWEL	1902
Palmer Manufacturing Company, New York, NY	Athletic	PHYSICAL POWER TESTING MACHINE	1887
Pan-Am Machine Company, New York, NY	Peep Show	(UNKNOWN)	1898
Clara E. Patterson, New York, NY	Peep Show	(UNKNOWN)	1895
	Peep Show	(UNKNOWN)	1896
James William Patterson, New York, NY	(Unknown)	(UNKNOWN)	1903
Paupa And Hochriem, Chicago, IL	(UNKNOWN)	(UNKNOWN)	1902
Peck And Snyder, New York, NY	Peep Show	COIN STEREOSCOPE	February 1888
	Peep Show	AUTOMATIC PICTURE MACHINE	May 1888
	Automaton	(UNKNOWN)	February 1888
	Target	MANILA	July 1899
	Athletic	HALL'S STANDARD LUNG TESTER	January 1886
	Athletic	HAND GRIP TEST	March 1886
	Athletic	IMPROVED HEALTH LIFT	1887
Penny Palace, San Francisco, CA	(Unknown)	(UNKNOWN)	1905
T. W. Peterson Company, Chicago, IL	Shocker	ELECTRO MEDICAL BATTERY	1904
	Fortune	SPHINX FORTUNE TELLER	1904
Erbine C. Phillips, Appleton, WI	Athletic	JOHN L. SULLIVAN INDICATING STRIKING MACHINE	May 1889
Photo-Machine Company, Inc., New York, NY	Photograph	PHOTO-MACHINE	1904
Photoscope Company, New York, NY	Photograph	PHOTOSCOPE	1903
Physical Culture Manufacturing Company, New York, NY	Athletic	PHYSICAL CULTURE LUNG TESTER	June 1904
Albert Pick And Company, Chicago, IL	Athletic	NEW CENTURY STRENGTH TEST MACHINE	1902
	Bowling	NOVELTY BOWLING ALLEY	1904
	Athletic	SCIENTIFIC PUNCHING BAG	1904
	Bowling	BOWLING ALLEY NO. 1	1904
	Athletic	DEFIANCE	1904
	Bowling	NOVELTY BOWLING TABLE	1904
L. K. Pierce And Sons, Brooklyn, NY	Automaton	(UNKNOWN)	August 1887
	Amusement	COCK FIGHT	December 1888
Pneumatic Strength Test Company, Cleveland, OH	Athletic	COMBINATION STRIKER AND STRENGTH TESTER	January 1892
Projectorscope Company, New York, NY	Peep Show	PROJECTORSCOPE (non-coin)	1897
Projectoscope Company, New York, NY	Peep Show	PROJECTOSCOPE	1901
W. S. Reed Toy Company, Inc., Leominster, MA	Athletic	POWER TESTING MACHINE	June 1888
	Athletic	COIN FINGER FULL	June 1888
Reeves Manufacturing Company, New Haven, CT	Peep Show	COSMORAMA	August 1893
	Peep Show	STEREO-COSMORAMA	February 1897
	Peep Show	ILLUSTRATED SONG MACHINE (Cylinder)	April 1899
	Athletic	SPIROMETER	August 1905
The Regina Company, Rahway, NJ	Peep Show	REGINASCOPE	1902
George H. Reid Slot Machines, Cleveland, OH	Athletic	GRIP TESTING MACHINE	September 1893
John M. Reiners, New York, NY	Athletic	HAND GRIP TESTER	April 1887
Reliance Novelty Company, San Francisco, CA	Peep Show	RELIANCE KINETOSCOPE	1896
Isaac Richardson, Cleveland, OH	Exhibition	TIME MACHINE	January 1894
Ell Ridgeway, Philadelphia, PA	(Unknown)	(UNKNOWN)	1904
Ringer Stove Company, St. Louis, MO	Peep Show	COIN STEREOSCOPE	February 1892
Rogers Manufacturing Company, New York, NY	Athletic	JEFFRIES WOODEN PUNCHING MACHINE	May 1904
	Peep Show	PICTURE MACHINE	July 1904
	Card Vendor	LOVERS POST OFFICE	July 1904
	Stamper	NAME PLATE MACHINE	July 1904
	Fortune	FORTUNE TELLER	July 1904
Rogers Manufacturing Company, St. Louis, MO	Athletic	1904 JEFFRIES PUNCHING MACHINE	September 1904
	Peep Show	SLOT PICTURE MACHINE	September 1904

Charles Rohde, Minneapolis, MN	(Unknown)	(UNKNOWN)	1904
Roovers Brothers, Brooklyn, NY	Fortune	(UNKNOWN)	December 1888
	Athletic	POWER TESTING MACHINE	June 1889
	Exhibition	COIN MICROSCOPE	December 1889
	Athletic	STRENGTH TESTING MACHINE	December 1889
	Automaton	EDUCATED MONKEY	December 1889
	Fortune	MADAME ZITA	May 1895
	Stamper	MEDAL STAMPER	November 1900
	Stamper	NAME PLATE MACHINE	May 1901
	Fortune	PUSS IN BOOTS	July 1904
	Fortune	MLLE. ZITA ("Electrical Zita")	1904
Roovers Manufacturing Company, New York, NY	Stamper	NAME PLATE MACHINE	November 1902
	Stamper	NEW NAME PLATE MACHINE	February 1903
	Stamper	NAME PLACE MACHINE MODEL A	March 1904
	Stamper	ENGRAVING MACHINE	July 1904
	Athletic	ARM POWER TEST	1904
	Stamper	COLOR NAME PLATE MACHINE	August 1905
Rosenfield Manufacturing Company, New York, NY	Peep Show	AUTO-STEREOSCOPE	February 1900
	Peep Show	MUSICAL AUTO-STEREOSCOPE	February 1900
	Peep Show	REGENT	February 1900
	Peep Show	MUSICAL REGENT	1901
	Athletic	SCIENTIFIC PUNCHING MACHINE	December 1900
	Athletic	LUNG TESTER	December 1900
	Peep Show	VICTORIA	1901
	Peep Show	VAUDOSCOPE	1902
	Peep Show	ILLUSTRATED SONG MACHINE	1902
	Athletic	HERCULES PUNCHING MACHINE	1902
	Peep Show	1903 ILLUSTRATED SONG MACHINE	1903
	Athletic	UNIQUE COMBINATION	May 1903
	Peep Show	1904 ILLUSTRATED SONG MACHINE	June 1903
	Athletic	TRIUMPH PUNCHING MACHINE	November 1903
	Athletic	DEFIANCE PUNCHING MACHINE	November1903
	Athletic	AJAX PUSHING MACHINE	November 1903
	Athletic	PEERLESS PENNY-BACK MACHINE	November 1903
	Amusement	ILLUSION	1904
	Athletic	MONARCH PENNY-BACK MACHINE	1904
	Athletic	TWISTER	1904
	Athletic	HOW STRONG ARE YOU?	1904
	Athletic	ATHLETE MUSCLE BUILDER	1904
	Athletic	PERFECTION GRIP-TEST	1905
	Athletic	MAJESTIC COMBINATION	1905
Sapho Manufacturing Company, Chicago, IL	Peep Show	QUARTOSCOPE	April 1897
	Peep Show	DELUXE SAPHO QUARTOSCOPE	October 1897
	Peep Show	SAPHO	1898
Az Satterfield, Knoxville, TN	Dispenser	(UNKNOWN)	December 1903
Arthur Schiller And Company, Chicago, Il	Shocker	SHOCKO	1902
	Shocker	GOOD HEALTH	1902
Gustav F. W. Schultze, San Francisco, CA	Athletic	JOHN L. SULLIVAN ATHLETIC PUNCHING MACHINE	July 1889
	Athletic	STRENGTH TESTER	November 1891
	Fortune	FORTUNE TELLER NO. 1	1894
	Fortune	FORTUNE TELLER NO. 2	1895
Oskar Schwidetzky, New York, NY	Bowling	BOWLING GAME	July 1902
Sears, Roebuck & Company, Inc., Chicago, IL	Peep Show	MOVING PICTURE MACHINE (non-coin)	October 1899
Martin Shuster, Great Falls, MT	Target	(UNKNOWN)	March 1900

Sidway Manufacturing Company, Chicago, IL	(Unknown)	(UNKNOWN)	1894
Siegfried Silberberg, New York, NY	Fortune	ARCHER'S GAME	January 1896
Simplex Manufacturing Company, New York, NY	Stamper	NAME PLATE MACHINE	October 1901
Sloan Novelty And Manufacturing Company, Philadelphia, PA	Athletic	ELECTRIC LIGHT LUNG TESTER	May 1903
	Athletic	IMPROVED ELECTRIC LUNG TESTER	April 1905
	Shocker	ELECTRIC SHOCK	April 1905
	Card Vender	SINGLE PLAY POSTAL CARD MACHINE	April 1905
	Card Vender	DOUBLE PLAY POSTAL CARD MACHINE	April 1905
	Card Vender	QUADRUPLE PLAY POSTAL CARD MACHINE	April 1905
William T. Smith Manufacturing Company, Providence, RI	Exhibition	THE LOCOMOTIVE	December 1885
	Exhibition	STEAM ENGINE	1886
	Exhibition	LOCOMOTIVE AND TENDER	1886
	Exhibition	STEAMSHIP	1886
	Exhibition	LARGE LOCOMOTIVE	1887
	Exhibition	STEAMBOAT	1887
	Exhibition	COTTON GIN	1889
	Exhibition	HARVESTING MACHINE	1889
Gustav Soeding, Philadelphia, PA	Athletic	COIN STRENGTH TESTER	October 1888
	Athletic	NEW COIN STRENGTH TESTER	April 1889
	Athletic	AUTOMATIC GRIP MACHINE	December 1889
Southern Automatic Electric Shock Machine Company, New Orleans, LA	Shocker	AUTOMATIC ELECTRIC SHOCK MACHINE	May 1888
	Shocker	NEW AUTOMATIC ELECTRIC SHOCK MACHINE	June 1888
Leonard G. Spencer, New York, NY	Peep Show	(UNKNOWN)	January1900
William G. Spiegel, New York, NY	Automaton	(UNKNOWN)	February 1888
Standard Electric Company of Vermont, St. Johnsbury, VT	Athletic	ELECTRO-THERAPEUTIC STRENGTH TESTING MACHINE	October 1886
Stauffer And Hall, Springfield, MA	Fortune	PRIZE FIGHTER FORTUNE	February 1901
Mathew Joseph Steffens, Chicago, IL	Photograph	AUTOMATIC PHOTOGRAPH MACHINE	May 1889
Stereo-Cosmorama Company, New Haven, CT	Peep Show	STEREO-COSMORAMA	1897
B. A. Stevens, Toledo, OH	Shuffle	STEVENS REGULATION SHUFFLE BOARD	October 1899
J. W. Stirrup Manufacturing Company, New York, NY	Peep Show	ARTOSCOPE	October 1898
Fred Street, Philadelphia, PA	Amusement	SAILBOAT RACE	August 1894
August Sundh, Yonkers, NY	Athletic	COMBINATION WEIGHING, LIFTING, MEASURING AND ELECTRIC MACHINE	November 1890
John D. Sutter, Chicago, IL	Athletic	AUTOMATIC LUNG TESTER	September 1889
Daniel H. Talbert, Greenwood, IN	Amusement	BOX BALL	February 1902
James P. Taylor, Fort Worth, TX	Fortune	DREAM-REVEALER	April 1893
Richard Teichmann, Brooklyn, NY	Amusement	BASE-BALL GAME	April 1889
Tirograph Company, Chicago, IL	Target	TIROGRAPH	1904
William L. Tomlinson, Hartford, CT	Athletic	TORSIONAL GRIP TEST MACHINE	January 1889
Troxler Novelty Introduction Company, Newark, NJ	Athletic	JOHN L. SULLIVAN STRIKING AND STRENGTH TEST MACHINE	December 1892
U.S. Automatic Machine Company, Boston, MA	(Unknown)	(UNKNOWN)	1904
United States Machinery And Inventions Company, Newark, NJ	Amusement	AUTOMATIC KALEIDOSCOPE	August 1889
	Fortune	GYPSY QUEEN	1890
United States Novelty Company, Kansas City, MO	Athletic	IRON PUNCH	1904
	Athletic	STRENGTH MACHINE	1904
United States Puzzle And Novelty Company, Louisville, KY	Information	AUTOMATIC MEASURING MACHINE	1889

Up-To-Date Slot Machine Company, New York, NY	(Unknown)	(UNKNOWN)	March 1904
Bernard Van Leer, New York, NY	Athletic	JOHN L. SULLIVAN BLOW TESTING MACHINE	April 1888
Charles A. Wagner Manufacturing Company, Chicago, IL	(Unknown)	(UNKNOWN)	October 1898
Rudolph Wagner, New York, NY	Peep Show	COIN STEREOSCOPE	June 1898
Walter P. Warren, New York, NY	Peep Show	(UNKNOWN)	July1900
Watling Manufacturing Company, Chicago, IL	Athletic	ACROBATIC LUNG TESTER	December 1903
	Athletic	COMBINATION GRIP AND LIFTING MACHINE	1903
	Athletic	STRENGTH MACHINE	1903
	Athletic	FIVE IN ONE	1903
	Peep Show	SAPHO PICTURE MACHINE	December 1903
	Athletic	AMUSEMENT LUNG TESTER	December 1903
	Athletic	PUNCHING MACHINE	1903
	Peep Show	PICTURE MACHINE	1904
	Fortune	FORTUNE TELLER MACHINE ("Donkey")	1904
	Peep Show	IMPROVED PICTURE MACHINE	May 1905
	Peep Show	AUTOMATIC PICTURE MACHINE	1905
	Fortune	WIZARD FORTUNE TELLER	1905
	Vibrator	DOCTOR	May 1905
	Athletic	IMPROVED PUNCHING BAG	June 1905
	Card Vender	POST CARD MACHINE	September 1905
Irving A. Watson, Concord, NH	Athletic	COMBINATION STRENGTH TESTER	July 1888
	Athletic	ADVERTISING FINGER TEST	May 1890
Watson Machine And Novelty Works, Detroit, MI	Shocker	MEDICAL BATTERY	December 1897
Arthur E. Wells, New York, NY	Athletic	LUNG TESTER	January 1904
John P. Wennersten, Chicago, IL	Athletic	STRENGTH TESTING MACHINE	January 1895
Western Company, Chicago, IL	Athletic	CIGAR AND BLOWING MACHINE	October 1898
R. J. White Company, Chicago, IL	Shocker	ELECTRICIAN	October 1902
	Shocker	THE ELECTRIC	October 1902
	Athletic	LIFTING MACHINE	October 1902
	Athletic	BLOWING MACHINE	October 1902
	Athletic	GRIP MACHINE	October 1902
	Athletic	CHALLENGE PUNCHING MACHINE	October 1902
	Athletic	NEW PUNCHING MACHINE	July 1903
	Athletic	PUNCH ME	July 1903
	Athletic	NEW LIFTING MACHINE	July 1903
	Shocker	THE ZAZA	July 1903
	Peep Show	SAPHO	July 1903
White Manufacturing Company, Chicago Ridge, IL	Shocker	AUTOMATIC MEDICAL BATTERY AND LUNG TESTER	January 1905
	Athletic	CHALLENGE PUNCHING MACHINE	January 1905
	Athletic	LIFTING AND HAND TEST MACHINE	January 1905
	Athletic	IDEAL STRENGTH TESTER	January 1905
	Peep Show	AUTOMATIC SAPHO	January 1905
	Peep Show	SAPHO	January 1905
Frank A. Widger, Lynn, MA	Athletic	SULLIVAN STRIKING MACHINE	April 1889
James R. Williams, Fayetteville, NC	Peep Show	(UNKNOWN)	July1901
Percy G. Williams, Brooklyn, NY	Shocker	AUTOMATIC BATTERY	May 1887
	Shocker	AUTOMATIC BATTERY	January 1888
	Athletic	AUTOMATIC LUNG TESTER	December 1888
	Athletic	AUTOMATIC STRENGTH TESTER	June 1889
	Fortune	AUTOMATIC MONKEY	December 1889
	Fortune	AUTOMATIC ELEPHANT	1892
	Fortune	AUTOMATIC DONKEY	1892
J. D. Wolf, New Brighton, PA	Athletic	WATER LUNG TESTER	January 1903
Frank S. Zimmerman, New York, NY	(Unknown)	(UNKNOWN)	1904
Unidentified Manufacturers	Fortune	ORAPENICLE	1896

Peep Show	MUSICAL VIEWER	1897
Athletic	JUMBO (ELEPHANT) STRENGTH TESTER	1899
Athletic	TWO WAY LIFT	1902
Athletic	ELECTRICAL LUNG-TESTER	1902
Information	WONDER CALCULATOR	1904
Fortune	PHRENOLOGY	1905

BRITISH ARCADE MACHINES

Manufacturer and Location	Format	Name	Date
Acres & Paul, London, England	Peep Show	KINETOSCOPE	August 1894
	Peep Show	ANIMATOGRAPH (non-coin)	February 1896
T. Ansboro	Peep Show	KINEMATOGRAPH	September 1898
A. Archibald	Target	SHOOTING GALLERY	1893
	Target	IMPROVED SHOOTING GALLERY	April 1899
Argyle Automatic Company, London, England	Fortune	THE LINES OF THE HAND	1897
	Fortune	YOUR FORTUNE BY CARDS	1898
Armstrong Automatic Manufacturing Company	Athletic	SCIENTIFIC PUNCHING MACHINE	1901
	Peep Show	VICTORIA	1902
	Peep Show	VAUDOSCOPE	1903
Auto-Electric Rifle And Target	Target	SHOOTING GALLERY	April 1905
Automatic Amusement Company, London, England	Fortune	GYPSY FORTUNE TELLER	1891
	Amusement	CHAMPION	1899
Automatic Cinograph Company, Leeds, England	Peep Show	AUTOMATIC CINOGRAPH	March 1900
Automatic Machines (Haydon And Urry's Patents) Ltd., London, England	Amusement	FAIRPLAY SKILL TESTER	September 1900
	Amusement	FAIRPLAY SWITCHBACK	September 1900
	Target	ROTARY SHOOTING RANGE	September 1900
	Amusement	PALACE BILLIARDS	September 1900
	Fortune	WHEEL OF LIFE	September 1900
	Amusement	COLONIAL SHOOTING RANGE	1901
	Amusement	CRITERION	1901
Automatic Picture Gallery, Ltd.	Peep Show	AUTOMATIC PICTURE GALLERY	November 1901
Automatic Skill Manufacturing Company	Amusement	PAVILLION	1901
Automatic Sports Company, London, England	Amusement	TWO MAN FOOTBALLER	1899
	Amusement	TWO MAN CRICKETER	1899
	Amusement	YACHT RACER	1900
	Amusement	FOOTBALL MATCH	1903
	Amusement	THE CRICKET MATCH	1903
Bailey And Budgett, London, England	Target	PISTOL GAME	April 1897
E. J. Ball	Photograph	(UNKNOWN)	November 1898
A. Barr, London, England	Amusement	THE HERCULEAN	1891
	Athletic	STRENGTH TESTER	March 1903
G. Barron	Peep Show	KINEMATOGRAPH	November 1898
F. C. Baxter	Peep Show	(UNKNOWN)	May 1899
M. Bentzon	Peep Show	MAGIC LANTERN	December 1902
Bianchi And Harbach	Peep Show	ANIMATED PICTURES	September 1902
Bio-Automatics Ltd., London, England	Peep Show	MUTOSCOPE	1900
	Peep Show	TABLE MUTOSCOPE	1905
British Mutoscope And Biograph Company, London, England	Peep Show	MUTOSCOPE	April 1898
	Peep Show	MUTOSCOPE	1900
	Peep Show	BIOGRAPH (non-coin)	1900
F. Boberg	Exhibition	STATISTICS	November 1903
A. J. Boult	Athletic	GRIP LIFT	April 1899
D. A. A. Buck	Athletic	LUNG TESTER	December 1897
Burgess And Granger	Peep Show	ILLUSTRATED SONG MACHINE	April 1902
Cadett, Macculloch And Dickinson	Peep Show	(UNKNOWN)	May 1899
Canova Model Company, Birmingham, England	Exhibition	LIME HOUSE NIGHTS	1904
	Exhibition	OPIUM DEN	1905

	Exhibition	MACABRE ORCHESTRA	1905
	Exhibition	AMERICAN EXECUTION	1905
Canova And Thompson, Birmingham, England	Peep Show	CANOVASCOPE	1898
	Amusement	AUTOMATIC CYCLE RACER	1899
Thomas Cooper, Great Ryburgh, England	Peep Show	AUTOMATIC EXHIBITOR	April 1886
Carter And Leheup	Shocker	(UNKNOWN)	June 1904
F. J. Cocks	Target	SPRING SHOOTER	June 1900
T. Coop	Peep Show	(UNKNOWN)	December 1899
	Peep Show	(UNKNOWN)	July 1900
S. H. Crocker	Peep Show	(UNKNOWN)	July 1901
J. G. Cumming	Amusement	HORSE RACE	March 1893
S. Daly	Amusement	CYCLE RACE	January 1901
Henry Davidson, London, England	Exhibition	CHIMNEY SWEEP	1871
George De Melven, London, England	Amusement	CLIMBING RACE	1895
John Dennison, Leeds, England	Exhibition	SOLDIERS ON DUTY	1875
	Exhibition	MACHINE SHOP (Drill)	1875
	Exhibition	MACHINE SHOP (Lathe)	1875
	Exhibition	PADDLE STEAM SHIP	1875
	Exhibition	LADY MUSICIAN	1875
	Exhibition	THE FISHERMAN	1875
	Exhibition	VELOCIPEDE RACE	1875
	Exhibition	FRENCH ORGAN MAN	1882
	Exhibition	TINGLARY WOMAN	1882
	Fortune	FAIRY FORTUNE TELLER	1882
	Fortune	MOTHER SHIPTON FORTUNE TELLER	1882
	Music	SINGING BIRD	1882
	Exhibition	PUNCH AND JUDY	1882
	Fortune	TICKET FAIRY	1882
	Fortune	CONJURING	1882
	Exhibition	DRUNKARD'S DREAM	1882
	Exhibition	BELL RINGERS	1882
	Exhibition	GRINDING OLD FOLKS INTO YOUNG	1882
	Exhibition	HAUNTED HOUSE	1882
	Exhibition	FRENCH FAIR	1882
	Exhibition	CRYING BABY	1882
	Exhibition	TRUMPETERS	1882
	Exhibition	CHURCH TOWER	1882
	Exhibition	LADY AT SEWING MACHINE	1882
	Exhibition	LADY AT HER TOILET	1882
	Exhibition	MUSICAL FAIRY	1885
	Fortune	SORCERER FORTUNE TELLER	February 1887
	Exhibition	POOR FATHER	1890
	Exhibition	THE TREADMILL	1895
	Exhibition	THE HAUNTED BEDROOM	1896
	Exhibition	THE SORCERER	1897
	Exhibition	CHINESE TORTURES	1903
Doughty And Barrett, London, England	Amusement	THE RACER	1896
W. P. Douglas	Target	(UNKNOWN)	November 1905
Electric Rifle And Target Company, London, England	Target	ELECTRIC RIFLE	1901
	Target	ELECTRIC GUN	1902
	Target	ELECTRIC PISTOL	1905
Electrical Wonder Company, London, England	Peep Show	COIN ELECTRICAL TACHYSCOPE	1892
Electro-Medical Battery Company, Ltd., London, England	Shocker	CORINTHIAN	1888
	Shocker	ELECTRIC	1892
W. H. Ell And Company, London, England	Target	KRAC SHOT	October 1901
	Target	IMPROVED KRAC SHOT	May 1902
	Target	BOTTLE SHOOTER	1903
	Target	IMPROVED BOTTLE SHOOTER	February 1904
	Target	SHOOTING GALLERY	March 1904
	Target	IMPROVED SHOOTING GALLERY	December 1904
	Athletic	HERCULES TUG OF WAR	1905
H. Englefred, London, England	Fortune	FORTUNE PHONOGRAPH	1889

Percival Everitt, London, England	Athletic	BLOW TESTER	June	1886
	Athletic	STRIKE TESTER	June	1886
	Athletic	MUSCLE TESTER	December	1886
	Shocker	ELECTRIC SHOCK TESTER	February	1888
	Shocker	CABINET ELECTRIC SHOCK TESTER	February	1888
	Athletic	GRIP TESTER	September	1888
A. Forbes	Amusement	CONCENTRATION	June	1901
Arthur Ford-Lloyd, London, England	Shocker	CORPSE REVIVER	September	1890
F. Ford	Amusement	AUTOMATIC MICROSCOPE	January	1902
Nicole Freres, London, England	Target	NEW PISTOL SHOOTING RANGE		1900
T. Fryer	Amusement	MARCHING BAND	November	1897
	Peep Show	AUTOMATIC KINETOSCOPE	August	1900
T. A. Grant	Athletic	LUNG TESTER	June	1897
Bruce Green, Middlesex, England	Information	OPTOMETER	February	1889
W. C. Haigh	Amusement	BOXING MATCH	November	1900
D. Harper And Company, London, England	Shocker	ELECTRIC VOLTA		1899
Anthony Harris And Company, Middlesborough, England	Fortune	GYPSY FORTUNE TELLER	May	1888
	Fortune	(UNKNOWN)	June	1888
Haydon And Urry, London, England	Target	ARCHER	November	1892
	Amusement	JEU DE TONNEAUX	November	1894
	Peep Show	AUTOCOSMOSCOPE		1895
	Amusement	SHOOTING FOR GOAL	May	1895
	Amusement	FAVORITE FLOWER		1896
	Fortune	WHEEL OF LIFE	August	1899
	Amusement	AUTOMATIC BILLIARDS		1899
	Amusement	FAIRPLAY SWITCHBACK		1899
	Amusement	PALACE BILLIARDS		1900
	Target	ROTARY SHOOTING RANGE		1900
	Target	COLONIAL SHOOTING RANGE		1900
	Target	LICENSED VICTUALLERS SHOOTING RANGE		1900
	Shocker	CRITERION		1900
	Amusement	FAIRPLAY SKILL TELLER		1900
W. Haydon And Company, London, England	Peep Show	ERASCOPE		1902
	Peep Show	ERAGRAPH		1902
	Shocker	HAYDON-PREMIER	September	1902
	Fortune	PALMISTRY	September	1902
	Peep Show	AUTOCOSMOSCOPE	September	1902
	Card Vender	CHARACTER FROM THE COLOUR OF THE EYE	September	1902
	Card Vender	CHARACTER FROM THE COLOUR OF THE HAIR	September	1902
	Fortune	AUTOMATIC ASTROLOGY	September	1902
	Card Vender	THE BOOK OF FATE	September	1902
	Card Vender	X RAYS PHOTO MACHINE	September	1902
	Fortune	THREE DRAWER FORTUNE AND CHARACTER MACHINE	September	1902
	Card Vender	POSTMAN	September	1902
	Dispenser	NEW PHOTOGRAPHIC SOUVENIR MACHINE	September	1902
	Fortune	LOVE, COURTSHIP AND MARRIAGE	September	1902
	Card Vender	BRITISH BEAUTIES BUREAU	September	1902
	Shocker	(UNKNOWN)	February	1903
	Amusement	BLOW BALL	September	1903
H. C. Heide	Photograph	AUTOMATIC PHOTOGRAPHER	February	1904
F. Hepton	Fortune	(UNKNOWN)	July	1901
E. G. Herbert	Target	SHOOTING RANGE	September	1900
T. E. Hollings	Amusement	TABLE TENNIS	January	1902
M. C. Hopkins	Peep Show	ILLUSIONS	September	1904
Howson And Crowe, Middlesborough, England	Athletic	SPIROMETER	September	1887
P. B. Hughes	Athletic	LUNG TESTER	July	1899

Imperial Automatic Novelty Company, London, England	Athletic	LUNG TESTER	January 1900
Imperial Electric Company, London, England	Peep Show	CINEMATOGRAPH (non-coin)	1901
William Porritt Ingham, Middlesborough, England	Shocker	IMPERIAL	1901
	Information	HEIGHT MEASURING MACHINE	September 1877
Charles Ingrey, London, England	Amusement	THE PUGILISTS	March 1894
Interchangeable Automatic Machine Company, Islington, England	Amusement	X-RAY MACHINE	1898
	Amusement	ALLEY SLOPER	1898
	Fortune	(UNKNOWN)	1898
International Automatic Machine And Cinematograph Company, Islington, England	Peep Show	CINEMATOGRAPH (non-coin)	1900
	Peep Show	MUTOSCOPE	1903
International Automatic Machine Company, London, England	Fortune	NATIONAL FORTUNE TELLER	1901
P. J. Jackson	Peep Show	(UNKNOWN)	August 1901
	Peep Show	(UNKNOWN)	April 1902
Jactho Patent Automatic Advertising Lamp Company	Peep Show	AUTOMATIC ADVERTISING LAMP	June 1899
John Jofeh, Walthamstow, England	Amusement	JOHN BULL	1901
	Amusement	BICYCLE RACE	January 1902
	Target	SWEETMEAT SHOOTER	January 1903
V. W. Jones	Target	AUTOMATIC SHOOTING GALLERY	October 1905
Daniel Judson And Son, Ltd., London, England	Shocker	AUTOMATIC BATTERY	July 1886
Kingscote And Williams	Peep show	AUTOMATIC ADVERTISER	February 1903
R. Krayn	Peep Show	(UNKNOWN)	October 1899
Nelson Abyssinia Theodore Lee, Blackpool, England	Exhibition	(UNKNOWN)	1900
	Card Vender	LOVE LETTER BOX	1900
	Exhibition	(UNKNOWN)	1904
P. F. Landais	Peep Show	(UNKNOWN)	June 1901
A. B. Langham	Peep Show	ZEOTROPIC PICTURES	October 1897
C. J. Leather	Amusement	(UNKNOWN)	December 1899
J. B. Lewthwaite	Target	SHOOTING GALLERIES	July 1902
Charles M. Linley, London, England	Amusement	ROLLER BALL	January 1896
London Standard Company, London, England	Photograph	(UNKNOWN)	May 1903
C. Lorenz	Target	(UNKNOWN)	December 1903
L. V. Automatic Company, Ltd.	Peep Show	AUTOCOSMOSCOPE	1898
E. Mallse	Peep Show	(UNKNOWN)	August 1899
Joseph Mason And Company, London, England	Exhibition	(UNKNOWN)	1880
	Shocker	ELECTRO-MEDICAL BATTERY	1889
	Fortune	AUTOMATIC ASTROLOGER	1890
	Peep Show	KALLESCOPE	1890
	Athletic	SPIROMETER	1892
	Shocker	AUTOMATIC MEDICAL ELECTRIC MACHINE	1895
	Card Vender	LOVE LETTERS	1896
	Card Vender	COMIC CARDS	1896
	Card Vender	ONE'S FUTURE WIFE	1898
	Card Vender	ONE'S FUTURE HUSBAND	1898
	Card Vender	ONE'S FUTURE BABY	1898
	Peep Show	MUTOSCOPE	October 1899
	Peep Show	(UNKNOWN)	December 1899
	Amusement	DONNYBROOK FAIR	1904
E. G. Matthewson, London, England	Target	PENNY SHOOTER	1890
	Amusement	FOOTBALL	1896
	Amusement	HORSE RACER	May 1896
	Amusement	CRICKET	July 1899
	Amusement	YACHT RACE	November 1900
	Amusement	GOLF	1903
	Amusement	IMPROVED FOOTBALL	February 1903
B. McKenzie	Athletic	LUNG TESTER	March 1898
W. A. McNutt	Athletic	LUNG TESTER	November 1900
	Target	PISTOL SKILL	May 1901
Mechanical Trading Company, London, England	Athletic	TRY YOUR GRIP	1895

	Athletic	TRY YOUR TWIST	1895
	Target	AUTOMATIC SHOOTING RANGE	1895
C. F. Mensing	Peep show	ILLUSTRATED SONG MACHINE	April 1903
J. H. Meurice And Company, London, England	Peep Show	KALLOSCOP	1900
	Amusement	AUTOMATIC CIRCUS	1900
	Amusement	SHOOTING FOR GOAL	1900
Charles Middlebrook, London, England	Amusement	RACE COURSE	March 1900
T. MillsonAmusement		MICROSCOPIC EXHIBITION MACHINE	February 1901
E. H. Mond	Fortune	AUTOMATIC ASTROLOGER	August 1900
Mutoscope And Biograph Syndicate, Ltd., London, England	Peep Show	MUTOSCOPE (Wooden MUTOSCOPE)	July 1895
	Peep Show	MUTOSCOPE	January 1898
	Peep Show	BIOGRAPH (non-coin)	1898
	Peep Show	BRITISH MUTOSCOPE	January 1899
National Manufacturing Company	Fortune	NATIONAL FORTUNE TELLER	1899
New Polyphon Supply Company, London, England	Shocker	ELECTRON	April 1902
Northorpe And Smith, London, England	Fortune	ORACLE	April 1889
William S. Oliver	Shocker	TALKING ELECTRIC BATTERY	August 1887
Robert W. Page, London, England	Athletic	TRY YOUR STRENGTH	October 1885
	Athletic	COUNTERPOISE STRENGTH TESTING MACHINE	October 1885
	Photograph	(UNKNOWN)	May 1902
	Card Vender	(UNKNOWN)	October 1904
Palmers Automatic Machine Syndicate, Birmingham, England	Amusement	CYCLE RACER	March 1900
James Parker, Hull, England	Athletic	COIN SPIROMETER	August 1888
James Parkes, London, England	Fortune	MECHANICAL ORACLE	February 1867
C. O. Paul	Athletic	STRENGTH TESTER	August 1899
	Athletic	LUNG TESTER	December 1899
Pessers And Moody, London, England	Fortune	MERCURY	November 1898
G. N. Pifer	Photograph	AUTOMATIC PHOTOGRAPHIC MACHINE	July 1902
Graydon Poore, London, England	Amusement	(UNKNOWN)	1893
	Athletic	FORTUNE TELLING STRENGTH TEST	November 1898
H. Purdie	Athletic	STRENGTH TESTER	October 1904
T. H. Quinlan	Peep Show	ADVERTISING EXHIBITOR	September 1900
E. Rector	Peep Show	(UNKNOWN)	September 1900
W. Reeves	Peep Show	(UNKNOWN)	March 1897
	Amusement	AUTOMATIC KALEIDOSCOPE	April 1897
G. Ringelhan	Amusement	RACE GAME	December 1900
Price And Castelle	Amusement	GET TEE ZEE	1899
	Amusement	NEW GET TEE ZEE	1900
Robbins And Company, London, England	Target	AUTOMATIC SKILL SHOOTER	May 1894
Cornelis F.A. Roell, London, England	Amusement	FOOT RACE	1891
Rose, Coop And Rissone	Peep Show	(UNKNOWN)	November 1898
	Peep Show	AUTOMATIC PICTURE ORGAN	April 1903
	Shocker	(UNKNOWN)	June 1903
	Peep Show	AUTOMATIC PICTURE PIANO	May 1905
Norman W. Russ, London, England	Shocker	NEW SHOCK MACHINE	July 1886
T. Scott	Amusement	(UNKNOWN)	1897
Scottish Inventions Company, Ltd., Edinburgh, Scotland	Target	SHOOTING RANGE	November 1890
J. C. Sellars, London, England	Athletic	SPEED TESTER	1887
R. H. And J. F. Shaw, Newton Heath, England	Amusement	FOOT-BALL	December 1898
Specialty Novelty Company	Athletic	STRENGTH TESTER	October 1903
Tate And Godfrey	Amusement	TUG OF WAR	May 1898
W. P. Thompson	Peep Show	(UNKNOWN)	September 1898
E. Thunderbolt	Target	SPINNING TARGET	September 1904
H. W. Toms	Fortune	(UNKNOWN)	July 1900
United Automatic Machine Company, London, England	Shocker	AUTOMATIC TIME LIMIT ELECTRIC	1903
R. W. Vining	Photograph	(UNKNOWN)	May 1897
Vulcan Engine Works, Middlesborough, England	Fortune	(UNKNOWN)	1889
Watson And Hooper	Athletic	EIFFEL TOWER	1902

G. F. White	Fortune	ANSWER MACHINE	July 1903
R. E. Wickes	Amusement	NAVIGATION MACHINE	January 1899
A. S. Williams	Athletic	WHISKEY LUNG TESTER	September 1900
	Athletic	IMPROVED WHISKEY LUNG TESTER	August 1901
Henry Woolfe, Seacombe, England	Peep Show	(UNKNOWN)	May 1898
	Amusement	BOXING MATCH	November 1902
C. Wray	Peep Show	(UNKNOWN)	1898
	Peep Show	(UNKNOWN)	July 1899
	Peep Show	(UNKNOWN)	August 1899
	Peep Show	(UNKNOWN)	February 1900
William Richard Wynne, London, England	Automaton	(UNKNOWN)	June 1895
Unidentified Manufacturers	Photograph	PHOTOMATON	1887
	Shocker	ELECTRIC CHAIR	1888
	Shocker	ZOOMORPHIC	1890
	Shocker	PIG	1901

AUSTRALIAN ARCADE MACHINES

Manufacturer and Location	Format	Name	Date
McMullen And Joseph, Perth	Amusement	RACE GAME	October 1889
Unidentified Manufacturers	Shockers	IMPERIAL	1904
	Peep Show	MUTOSCOPE ("Wooden Mutoscope")	1903

FRENCH ARCADE MACHINES

Manufacturer and Location	Format	Name	Date
Beraud	Fortune	LE MAGIC	1898
A. Block	Peep Show	(UNKNOWN)	December 1898
Leopold Breton, Paris	Peep Show	(UNKNOWN)	April 1901
P. Bussoz Freres, Paris	Photograph	PHOTOGRAPHIC AUTOMATON	1895
	Amusement	LE MILLE	1896
	Amusement	LA MERVEILLEUSE	1905
La Compagnie Caille (Cie Caille), Paris	Amusement	LA MNOTRE	1905
Enjalbert, Paris, France	Photograph	AUTOMATIC PHOTOGRAPHY	1889
Faure And Dufosse	Peep Show	(UNKNOWN)	May 1899
Feret And Benart	Photograph	AUTOMATIC PHOTOGRAPHY	August 1900
French Mutoscope And Biograph Company, Paris	Peep Show	MUTOSCOPE	1900
Industrielles Internationale d'Etudes	Peep Show	CAMERA OBSCURUS	June 1899
Edouard Jehn, Paris	Peep Show	(UNKNOWN)	June 1903
Philippe Leoni	Shocker	LE COCHON ELECTRISEUR (ELECTRIC PIG)	1898
Lumiere Brothers, Lyon	Peep Show	CINEMATOGRAPH (non-coin)	March 1895
Pasteur	Amusement	LES GUSGUSS	1892
Jules Richard, Paris	Peep Show	PICTURE EXHIBITOR	December 1887
	Peep Show	IMPROVED PICTURE EXHIBITOR	May 1900
Societe Generale Francaise D'Automatiques, Paris	Shocker	LE COCHEN ELECTRISUER AUTOMATIQUE	1898
Unidentified Manufacturers	Fortune	L'AVENIR	1892
	Automaton	COOCHEE-COOCHEE	1904
	Shocker	ELECTRISEZ VOUS	1905
	Amusement	L'INEDIT	1905

GERMAN ARCADE MACHINES

Manufacturer and Location	Format	Name	Date
Ottmar Anschutz, (Siemans And Halske)	Peep Show	TACHYSCOPE	1903
Automaten-Institute, Dresden	Athletic	KRAFTMESSER (PUNCHER)	1889
Automatische-Electrisir-Maschine	Shocker	ELEKTRISIER AUTOMAT	1895

Automates Electra GmbH, Cologne	Target	ELECTRA		1898
	Target	1905 ELECTRA	November	1905
Conrad Bernitt, Hamburg	Photograph	BOSCO		1893
R. Bünzil	Peep Show	STEREOSCOPIC KINETOSCOPE	April	1900
H. J. Dowsing	Amusement	RÖNTGEN RAY MACHINE	January	1897
Deutsche Automaten-Gesellschaft (D.A.G.) Stollwerck And Company, Cologne	Fortune	FORTUNA		1895
	Fortune	KLEOPATRA		1895
	Peep Show	PRINZESS PANORAMA		1895
	Shocker	AUTOMATIC ELECTRICITY		1895
	Fortune	WUNDERSTUHL		1895
	Target	ZIMMERSCHIESSSTAND (CHAMBER SHOOTING STAND)		1895
German Mutoscope and Biograph Company, Berlin	Peep Show	MUTOSKOP		1905
A. Haehle	Fortune	CHARACTER, FUTURE, PRESENT AND PAST	November	1899
M. Hermsdorff	Target	GUN	April	1903
	Target	PISTOL	April	1903
Jentzsch And Meerz, Leipzig	Amusement	I CALCIATORI		1900
E. G. Lochmann And Company, Leipzig	Target	DACAPO		1901
	Target	ZIMMER		1901
E. de Kieist	Photograph	(UNKNOWN)	September	1902
C. H. Kreiger	Stamper	(UNKNOWN)	September	1902
H. Künzel	Target	ELECTRIC TARGET	December	1904
Original-Musikwerke Paul Lochmann, Zeulenroda	Amusement	(UNKNOWN)		1900
Peters And Company, Gaggenau	Fortune	KLEOPATRA		1895
Polyphon Musikwerke, Leipzig	Peep Show	KALLOSCOPE		1890
	Peep Show	KALLOSCOPE		1895
Reiner, Pelzer And Company, Cologne	Photograph	BOSCO		1895
	Peep Show	KALLOSCOPE		1895
	Peep Show	PATENT-KALLOSCOPE		1895
	Amusement	PROF. RÖNTGEN'S X-STRAHLEN AUTOMAT (AUTOMATIC X-RAY) (non-coin)		1896
	Amusement	PROF. RÖNTGEN'S X-STRAHLEN AUTOMAT (AUTOMATIC X-RAY)		1896
	Exhibition	CIRCUS (BALLET GIRL AND CLOWN)		1897
	Exhibition	BAUERN-MUSIK-KAPELLEN (PEASANT MUSIC AUTOMATON)		1897
	Exhibition	LITTLE GERMAN BAND		1898
	Exhibition	CLOWN AM MOND		1898
	Exhibition	JONGLEUSE (LADY JUGGLER)		1898
	Exhibition	THIER-CAPELLE (ZOOLOGICAL ORCHESTRA)		1898
	Exhibition	LEITERKÜNSTLERIN (LADY ARTIST)		1898
	Exhibition	AKROBAT (ACROBAT)		1898
	Exhibition	DAMENKAPELLE (GIRLS CHAPEL)		1898
	Amusement	KANONE (CANNON)		1899
	Exhibition	SCHNELL-MALER		1900
	Exhibition	RIESEN-BAUERN KAPELLE		1900
	Exhibition	ORIENT BALLET		1900
	Exhibition	AFFEN-KAPELLE		1900
	Exhibition	GROSSVÄTERCHEN UND GROSSMÜTTERN (GRANDFATHER AND GRANDMOTHER)		1900
	Exhibition	KUNSTPFEIFER (THE WHISTLER)		1900
	Exhibition	MUSIKALISCHE CLOWNS (MUSICAL CLOWNS)		1900
	Exhibition	BALLHAUS (DANCEHALL)		1900
	Exhibition	PRIMA BALLERINA		1900
	Exhibition	LITTLE JOE AND MISS GREEN		1900
	Exhibition	CLOWN AN STELZEN (CLOWN ON STILTS)		1900
	Exhibition	STELZENKÜNSTLERIN		1900
	Exhibition	CLOWN ALS KUGELKÜNSTLER		1900

Exhibition	SEILTÄNZER (ROPE WALKER)	1900
Exhibition	OTHELLO	1900
Exhibition	TAUSENDKÜNSTLER	1900
Exhibition	DER VERLIEBTE CLOWN (THE WRITING CLOWN)	1900
Exhibition	SALONTYROLER	1900
Exhibition	DER GEFRÄSSIGE MICHEL	1900
Exhibition	CLOWN BOBB	1900
Exhibition	ATHLET HERCULES (HERCULES THE ATHLETE)	1900
Exhibition	CLOWN ALS ZAUBERER	1900
Exhibition	ELFENKÖNIGIN	1900
Exhibition	BERLINER SCHUSTERJUNGE	1900
Exhibition	SCHLANGENMENSCH	1900
Exhibition	CLOWN-KAPELLE	1900
Exhibition	DIE LEITERFEE	1900
Exhibition	CLOWN MIT MUSIKALISCHEM BE SENSTIEL	1900
Exhibition	TURNKÜNSTLER	1900
Exhibition	GIGERLKONIGIN	1900
Exhibition	CLOWN AND STÜLEN	1900
Exhibition	DIE KLEINE DRAHTSEILKÜNSTLERIN	1900
Peep Show	MUTOSKOP	1900
Peep Show	KAISER-UND WELT-PANORAMA (6 people)	1900
Peep Show	KAISER-UND WELT-PANORAMA (12 people)	1900
Peep Show	KAISER-UND WELT-PANORAMA (25 people)	1900
Shocker	VOLTA	1900
Fortune	ORAKEL-AUTOMAT (AUTOMATIC ORACLE)	1900
Athletic	KRAFT-AUTOMATEN IN LEBENGROSSE	1900
Exhibition	KUGELZAUBERER	1900
Peep Show	KINETOSCOPE PHONOGRAPH	June 1899
Peep Show	COMBINATION WEIGHER AND MUSICAL STEREOSCOPE	August 1894
Peep Show	ELEKTRISCHER SCHNELLSEHER	1893
Peep Show	(UNKNOWN)	February 1899
Amusement	SEE-SAW	February 1901
Peep Show	ILLUSTRATED SONG MACHINE	May 1899
Athletic	HERCULES	1900
Photograph	X-RAY PHOTOGRAPH	March 1897
Amusement	X-RAY DISPLAY	July 1897
Fortune	HEIRATHS VERMITTLUNGS BUREAU	1897
Peep Show	EDISON'S NEUESTE ERFMDUNG	1897
Exhibition	BALLET GIRL AND CLOWN	1897
Exhibition	CLOWN MIT 2 SCHWEINEN (CLOWN WITH 2 PIGS)	1898
Exhibition	CLOWN MIT GLÜCKSRAD (CLOWN WITH WHEEL OF FORTUNE)	1898
Exhibition	STUHL-TURNER (GYMNIST BALANCING ON A CHAIR)	1898
Exhibition	VIOLIN-ARTISTE (VIOLIN ARTIST)	1898
Amusement	RIESEN-PRACHT-KALEIDOSKOP! (GLORIOUS AUTOMATIC GIANT-KALEIDOSCOPE!)	1898
Exhibition	GELDQUELLE	1898
Athletic	HAUT DEN LUCKAS	1900
Fortune	CHYROMANT-AUTOMAT (PALM READER)	1900
Exhibition	ZUNGENSCHLEIFER	1900

A. Schoeller
Herman Seifert, Debschwitz

Siemans And Halske, Berlin
A. F. Spooner
K. Strauss
A. J. Swaab
Gustav Uhlig, Halle am/Salle
M. Vidal
J. Wertheimer
Unidentified Manufacturers

Exhibition	SEILTÄNZER (ROPE WALKER)	1900
Exhibition	OTHELLO	1900
Exhibition	TAUSENDKÜNSTLER	1900
Exhibition	DER VERLIEBTE CLOWN (THE WRITING CLOWN)	1900
Exhibition	SALONTYROLER	1900
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Unidentified Manufacturers

IRISH ARCADE MACHINES

Manufacturer and Location	Format	Name	Date
John Dundon, Cork	Amusement	RACE GAME	August 1899

NETHERLANDS ARCADE MACHINES

Manufacturer and Location	Format	Name	Date
Abraham Dirk Loman Manufacturer, Amsterdam	Photograph	(UNKNOWN)	August 1890
Nederlandsche Biographe en Mutoscope Maatschappij, Amsterdam	Peep Show	MUTOSCOPE	1900
T. Van H. Obelt	Photograph	RÖNTGEN RAY MACHINE	January 1897

SWISS ARCADE MACHINES

Manufacturer and Location	Format	Name	Date
Conrad Bach, St. Galle	Peep Show	AUTOMATIC PICTURE EXHIBITOR	March 1888

THE PRESERVATION OF THE PENNY ARCADE

The machine stands alone. Silent. Strange. Yet with the dropping of a coin it comes alive, permitting personal operation, or proceeding through its performance on its own depending on its machine class and function. Now imagine a room full of such machines of a dozen different classes, each doing something unique once coin activated. What you have is a rough simulation of the elusive yet enduring American phenomenon known as the Penny Arcade. The elusiveness is a function of time, for the Penny Arcade of 1905 is entirely different in decor and equipage than the Funland of the 1920s, the Sportslands of the World War 2 years, or the Game Rooms and Arcades of the present era. Yet these diverse rooms have more in common across the bridge of time than not, for within their place in the past century they are one and the same. During this span the enduring factor has been the arcade machine. It has survived through five generations of American life doing much the same thing today as it did when it started. Sure, there's more noise and color, and possibly some increased action involvement with the video game interpretation of the arcade amusement machine of the past, but through it all the arcade machine has generated affection and appreciation for its various modes for over a hundred years.

Individual machine appreciation, of itself, is often all that is demanded on the part of the dedicated few who adore, restore, own and operate their own vintage arcade machines. Such owners will often speak of their "museum quality" machines, but most often merely in the context of condition. The statement has no greater meaning than no breaks or missing parts, with surviving graphics on a pristine, while aged, cabinet. But this is still private collector talk, most often advanced at the time of an anticipated sale from one knowledgeable owner to another, and generally in order to hype the price. Such pioneer collectors see themselves grandly as The Living Museum of such artifacts while maintaining a paranoiac fear that some true publicly or privately funded museum will some day acquire a vast quantity of old arcade machines and, in disrespect, relegate them to the basement corners of un-understood Americana display, thereby removing them from the open market and possibly private ownership by their avid devotees.

In terms of present conditions such fears are unjustified. What budget-tight and display-conscious museum would actually allocate money — if it was indeed required for the purchase of the machines as more than likely such an acquisition would be a gift, say, by a closing amusement park or of a stash long held by an early arcade or amusement park family — to be followed by valuable display or storage space assigned to an assemblage of unknown virtue? What, indeed, would they be showing? And what nature of display environment would be required? The question remains unanswered for arcade machines (and all forms of coin-operated machines for that matter) have yet to find their academic classification much less their place in time.

Arcade machines have already been ignored by the museum elite for over a hundred years. If it wasn't for the enthusiasm of a matching five generations of private collectors — those who "just liked" and kept a machine or two or three ultimately leading to those who assembled major collections as much in obsession as appreciation — the machines would all have been discarded years ago. Most were. Yet some have survived as a thin oil slick of demonstration sliding over the unplumbed sea of machines produced in the past, enduring in enough numbers and examples to reveal most of the forms and many of the fashions of their age. People kept them. Private collections preserved them. Their heritage delicately survived.

Yet an essential question remains. Why, in over a century of development and usage, did some of these machines survive at all when there was no master hand plucking the select few out of the junk heap of time? Surely inserting a coin into some form of boxed device that does something or allows you to participate in an activity isn't enough. There must be charm beyond. There obviously is a deeper meaning here, one inherently understood but not readily expressed. It has to be intrinsic to the machines themselves for the genre has existed, and indeed prospered, as a money maker since the 1870s in Great Britain and the 1880s in the United States. Not many commercial manifestations of the industrial age have endured as long. Shoo-flys are gone, as well as steamboats, electric street rail-

ways, wire goods, hand operated punch presses, water powered ceiling fans, indoor telephone booths, real root beer and literally thousands of commonplace industrial age artifacts, all of which have earned a place in the nation's museums. So why not the coin-operated grippers (with a saloon tradition as wagering machines going back to the 1880s), spirometers (Lung Testers to the arcade machine affectionados, removed from the market by Federal Government decree as unsanitary early in this century as part of the national health care fight against tuberculosis), lifters (the macho machine that sometimes gave their over-enthusiastic saloon patronizing braggadocios a hernia), "Peep Show" MUTOSCOPES (the quintessential viewing machines that gave two generations of American young men their first look at "dirty pictures," except they weren't really that racy) and, for that matter, the video PAC MAN games of our own age. Perhaps this omission of academic and museum acceptance is based on the fact that arcade machines of almost any age survive as an everyday passion of American, and now international, life. Is it possible that there is a elitist bigotry against the commonplace, particularly one that endures?

It is unfair to paint all learned repositories of culture with the same black brush for there are signs, however few, that some curators indeed see arcade machines as museum quality artifacts. The Smithsonian Institution, the National Museum of American History, and the physical scientific, technological and cultural reflection of our past, has allowed a few coin-operated arcade machines to invade its hallowed halls, yet this modest invasion is uncoordinated as the machines are scattered across a wide variety of departments and exhibits. A recent exhibit included a donated Midway PAC MAN and an Atari PONG to demonstrate the dynamics of modern American life in the 1970s and 1980s. Buried in passive displays in other areas are a few American Mutoscope and Biograph MUTOSCOPE machines, an Edison Phonograph Company coin-operated PHONOGRAPH of 1897, and a fully operational Rosenfield 1903 ILLUSTRATED SONG MACHINE. The Smithsonian has never made the straight line connection between the two extremes, from Edison's PHONOGRAPH to Atari's PONG, seeing them as individual artifacts from their time frames rather than a study unto themselves. As a result the museum sits on a number of unconnected examples of the arcade art, showing them off in disparate displays that utilize the machines as not much more than backgrounding wallpaper.

The only true museums of the dynamic, people-involving, coin-grabbing, money-grubbing, participatory and entertaining arcade machines of the past aren't museums at all. They take their cue from the machines themselves, for they are there to make money. What child, dragging their parents along behind them, can resist the temptations of the antique arcades at Disneyland in California or Disney World in Florida, or the half-a-dozen other commercial amusement centers with their vintage coin-op arcade set-ups across this land? There, in a constant reminder of a past that these children and their parents never knew, MUTOSCOPE "Peep Show" crank handles whir as stereo drop-card "movies" rapidly and erratically show a naive, mostly humorous and often slapstick view of American public life in the early years of this century. Soon both child and parent are gripping a Tower Lifter for score, driving a toy car over a rapidly rotating roadway, getting their fortunes on a ticket from an automaton gypsy lady in a cabinet and buying funny postcards from a tall card vender.

They are enjoying themselves in as close an approximation of the 1905 Penny Arcade as one can publicly find, and they are gladly willing to pay to play. The memories of these coin-op amusements stick as often as the rides in the same parks, often longer. Many of today's private arcade machine collections were instantly born in these moments of uninhibited joy as both the parents and the soon-to-be-adult children found an enthusiasm they had never known before. Thus, newly created coin-machine fans often found themselves searching for a machine of their own, reading local trading papers, asking friends and acquaintances, and finally finding some of the underground cadre of a thousand or more private collectors who led them to their first buy. With that, another mini-museum is born to add to the guarantee that the arcade machines of the past will survive into the future. The prognosis is rigid and standard. Once hooked, the newly established collector will acquire more machines, and ultimately — as many do — an addition will be added to the patron's domicile to house the growing collection.

Those who acquire an affection for arcade machines, now and in the future, owe much, if not everything, to the private collectors. Without them the vintage machines would long ago have ceased to exist. The same will be true of the video machines of the present era, for unless collectors keep them, they will all be soon gone. Atari's PONG of the early 1970s, a device that you saw everywhere if you travelled or got out into the world at all, has become a rarity, with less than a dozen known examples in private collections, not to count the 1972 model at the Smithsonian Institution. The fine wood based shuffle games of the 1950s and 1960s have all but disappeared, unless you stumble across one in an archaic bar in some far away rural area where one is still earning its keep. It is axiomatic to the arcade machine collecting community that a "Peep Show" viewer from the first Golden Age of arcade machines of the early 1900s is generally easier to find than an early video of the 1970s. Known examples of some of the most popular early videos can be counted on one or two hands whereas hundreds of MUTOSCOPE machines of the 1897-1908 period grace the homes of collectors and the pseudo-arcades of enlightened amusement parks. Yet both extremes are of the same cloth. Collecting has not yet become sophisticated enough to have machine rarity relate to value, but at some future point in time it most certainly will.

It is this double dichotomy of place and time, rarity and value, that will ultimately lead to a revolution in the perception of the arcade machine. For now, their mere survival and existence is enough. They provide enjoyment for a small fee, usually fronted by their proud owners as a matter of convenience and protection. The required coinage is constantly recycled by the machine owner who, in deference to guests, will often provide a glass of well worn coins that will pass freely through the ancient coin receiving mechanism without insinuating the real damage that can be caused by the introduction of raw, uncirculated coinage. Some insightful machine owners and collectors will add to the ambience of their age by providing Indian Head pennies or Liberty Head nickels for the play, immediately conditioning the machine players to an experience out of the past.

For all of the enjoyment and instant recognition of arcade machines as vin-

tage devices that are fun to own and operate, their past remains murky. Who made these machines, why, where did they come from, how did they perform in their day, what did they lead to and what happened to the makers? These questions have been of little consequence to most of the private owners and collectors of the past. The machine was all. But there is so much more to the story, and it is here that the historians and students, owners and future collectors, and even the museums, have a vacuum to fill. The true enjoyment of the arcade machine goes far beyond the mere gimmickry offered by a dropped coin. It is in this extended view of the arcade machine and a renewed perception of its content as a public expression of the industrial arts that will lead to its ultimate survival. It took more than mere coin control to have machines of this class last so long, enduring for over a century of the most dynamic and changeable years in human history. Coin-op arcade machines were born before the commercialization of electricity, before the communications revolution created by the typewriter, before motion on films, the gasoline engine, flight or the automobile. They have endured, indeed prospered, from the gaslight age, through the two World Wars into the nuclear age and computer age, and yet show no sign of abating. That arcade amusements will be enjoyed a hundred years from today, be it by coin (a most likely prospect, for coins have been with us for over 3,000 years and remain a viable mechanism tripper), plastic card or pre-paid thought control, seems of little question. Their development goes on, much as it has in the past. Yet why do they endure? What magic do they contain that other manufactured or fabricated public amusements, long gone from the American scene, did not have? How have they kept up with the times?

The answer is damnably simple for, while to the collector the machine is all, it is not the machine at all that was the driver. It was and still is that endless engine of change now known as popular culture. What we have here is a cultural expression, not a mechanical one, taking the form it takes only because the combined human skills of inventions and fabrication, allowing an opportunity for income to defray the costs of creation and the delivery of its brand of continually current entertainment, resulted in a machine that operated by a coin. Form follows function, or a collection of functions, and the success of the format leads to a continuation of the form. The arcade machine may well be one of the outstanding achievements of the industrial age, yet remains hidden because its history has been restricted to individual machines, one at a time as they were popular, rather than a recognition of their class as a series of machines based on a progressive stream of truly revolutionary developments. This lack of an overview can be directly related to their marriages to a series of spouses, that being the comings and goings of popular culture, for this is culture without a history. Fads burst on the scene and then fade fast, often having little relationship to one another. And arcade machines were always faddish. The unsteady stream of popular culture provides its own testimony as to how this could happen, and shows how easily individual arcade machines could get lost in the shuffle. Forced by industrialization, cradled by disposable income and demanded by a populace that needed a break from the rigors of an overworked 12 hour day, 6 days a week, a wave of popular culture swept over the developing world in the middle 19th Century. It was a narrow world, encompassing Western Europe, the British Empire and North America, wherever steel was made and saleable manufactured products were produced. The laboring and farming classes needed an outlet to vent their aggressions while grabbing a moment of joy in an otherwise grim existence. Toys, games, entertainments, music halls, saloons and more were created and popularized in the last half of the 19th Century and into the New Century as the largely uneducated, often functionally illiterate masses determinately sought personal expression in their amusements. Industrial exhibitions fanned the flames of interest and provided a non-verbal education in the capabilities of the industrial arts, making the public an integral part of the growing bank of technical knowledge being rapidly spread like soft butter across the Western World.

In Great Britain the numerous exhibitions, with special days open to the public, made virtually every British citizen aware of the advanced technical skills and physical advances of their kingdom. With the entire populace of the British Isles streaming through decorated exhibition halls filled with the marvels of the industrial age, visitors could drop coins into articulated exhibitions placed along the halls and in special areas and watch automatons in action and miniaturized machinery at work. These early working models included tableaus appealing to men and women alike of all classes.

In the Americans, with far greater distances to travel, the exhibitions — often in Philadelphia and annually in Cincinnati — became the purview of the industrial elite. In the industrially isolated and often far away rural male-and-labor dominated society of the United States the common man's haven and educational center became the saloon, or "Poor Man's Club," where an interchange of ideas, soon augmented by bartop mechanical amusements, passed the time. These amusements more often than not were forms of gambling, with wagers between patrons made and lost over who could lift the most weight, squeeze the tightest grip or blow the strongest to move a pointer dial. It was to solve the problem of the barkeep's divided attention between bartending and amusement tending that the bartop and floor strikers, weighing scales, lifters, grips, lung and punch testers long played by paying the barkeep a nickel, became self-supporting coin-operated devices that allowed the bartender to keep serving while the patrons amused themselves on their own. It was the 1870s British created, and middle 1880s American accepted, advent of coin-ops, based on the new found mechanical ability to permit the secure passage of a coin to trip a mechanism, that allowed the operation of a physical display or provided the permission and ability to partake in the machine's given function, that finally made the saloon patrons responsible for their own entertainment. The machines became increasingly appealing in order to attract the play. Cross pollination of thought quickly leaped the Atlantic Ocean, leading to American-made versions of the varied popular British pub games in American saloons and vice-verso, while highly original American-made-exhibition machines soon began to show up in high density locations such train stations and public buildings across the United States and Canada. But even in emulation, the American concept differed. Where the British centered their thinking on remindful and universally appealing demonstrations, such as historical Royal events, the glorification of beautiful ladies-in-waiting and the macabre, the American interpretation was all business and largely

mechanical "Working Models." William T. Smith's articulated THE LOCOMOTIVE of 1885, Howland's AGE INDICATOR of 1888 and Edward Amet's intriguing POWER STATION and STEAMBOAT exhibition machines of 1889 captured the imagination of a whole generation of soon-to-be railroad engineers, machinists, mechanics, factory and foundry workers, not to mention a legion of future coin machine operators and, at the upper end of the scales, America's future electrical engineers, design engineers and inventors. With that, the arcade machine broke the bounds of its saloon entrapment and became a public amusement for all to enjoy.

Therein lies the magic. The arcade machines of the past incorporated advanced technology while they met the insatiable demands of popular culture, and did so in the context of that largely indefinable public cultural expression now known as folk art. The machines of the present are doing exactly the same thing today, and will continue to do so into the future. It's the point of difference that obviates the machine itself and bases the endurance of the arcade machine on a continued response to public demand rather than its mechanical, electro-mechanical, video solid state or whatever features the future may bring in terms of technology. What other amalgamation of advanced technology, popular culture and commercialized folk art has endured as long? Name one!

This magic of substance and endurance is only enhanced by the who, why, where, how and what questions, for they are the often missing ingredients in the present enjoyment of past machines. Here it will take serious researchers and ultimately the publicly funded museums to fill out the story, for the rare meat is even more interesting than the collected bones. It will be important to the museums to know who made their machine, why and when. Enlightened private collectors are just a eager to learn these facts. It's important to them to know that the American Mutoscope and Biograph Company dropped out of the MUTOSCOPE production and placement before 1910 in order to fully concentrate on motion pictures, that the Exhibit Supply Company of Chicago inherited the mantle of a full line of arcade machines from both the Mills Novelty Company and the Caille Brothers Company after World War I when these two major producers all but dropped out of the field in order to concentrate on the more lucrative yet highly competitive field of automatic payout slot machines, and that the surge of video games of the early 1980s that followed the dramatic success of the California-made Atari games of the 1970s were actually of Japanese origin. With the surviving machines in hand, such knowledge transcends the cold facts to become part of their living history. It becomes, in effect, artifact enhancement.

We may never know all of the makers, much less all of the arcade machines made in the past century. We surely will also lose track of many of the machines of the future for present records, in spite of computer advancements, are not as well kept. Data not entered now disappears later. Yet these omissions should not deter our desire to know more about what we have and where they came from. This forceful drive for a newer perception of the arcade machine is remindful of the same sort of dichotomous evaluation now under debate in the confusing field of folk art. Long championed by a select group of collecting enthusiasts and connoisseurs, many of them wealthy and powerful enough to establish or contribute their diverse folk art holdings to major art museums, folk art finally received recognition as a unique and charming American art form. Scholarly revisionists, trained in folk lore rather than art, and able to study surviving folk art examples in the established museums and private collections, have sorely challenged this assessment and have placed folk art squarely in the field of popular culture, albeit an artistic expression of "folk material culture." The point has also been made that within this context photography too can be defined as folk art. Yet throughout this Great Debate within both academic and folk art collectible circles the artifact owners and the new folklore professionals have totally ignored the one expression of material culture that unifies the claims of both viewpoints: the arcade machine. It is public art — industrial to be sure — with popular culture expressions, not to mention the photographic aspects of a typical "Peep Show" machine. It is also the ultimate expression of material culture by virtue of state-of-the-art technology for any given point in time. With museums dedicated to all of these concepts, individually and collectively, and graduate programs in folklore at a number of major universities, how could such an active and enduring expression of the living American culture as flagrant as the arcade machine have been missed or ignored by the academicians for so long? Such a major cultural omission could reasonable be attributed to ignorance, yet the intense study lavished on all other forms of folk material culture, public arts, the entertainments and motion pictures suggests that the lack of professional study of the arcade machine and its place in American culture constitutes a disgrace. The keepers of the American flame, those professionally responsible for telling future generations what we were like and what we did, haven't dug deep enough. Yet in spite of this wall against wisdom — it may well be a bigotry against what appears to be mundane — and with no professional champions; no private, institutional or public funding for study; and no dedicated museums where interested students of the Penny Arcade and its machines can see and operate them, the allure of the arcade machine still survives. The credit for this survival of interest goes to the private collectors, for without them it would all have been lost long ago.

To go beyond the machines, what of the Penny Arcade as a physical environment of the past? This was a cash flow business — as it is today — and as long as coins in exceeded the expenses out, the business prospered. But once the coin stream slowed, or dramatically stopped, the arcade closed its doors. Much like the massive movie palaces of the past, the Penny Arcades had ambience all their own. Movie enthusiasts are indeed lucky, for a number of the marvelous motion picture theatres of the 1920s and the early "talkies" period still survive, with active committees and preservationist societies in towns and cities across the country seeing to it that they endure and even prosper as cultural centers. Penny Arcade enthusiasts aren't as lucky, for none of the establishments of the distant past — not one! — still exist. Some of the ancient building facings still survive — you can spot them in what are generally run down areas close to the ancient center business core of a substantial number of American cities — with the store fronts long ago changed to something else, or abandoned. Restorations are still possible, yet no preservation group anywhere has yet advocated the recreation of a Penny Arcade. Perhaps they existed too long ago to be of current interest, or perhaps we are again faced with a possible bigotry against the ordinary.

For one thing, what did they look like? Pictorial records are scant and a search of the photographic archives of the libraries and historical societies of most major cities revealed few images. The catalogues, sales literature and promotional materials of the machine makers remain the most solid source of information and pictures, yet even here they let us down. It is all but impossible to find proved arcade layouts and recommended machine set-ups for any period between 1910 and the present era. Surely they were made. They just weren't saved, perhaps because they were of such import that they were used, overused and abused, and in the process, destroyed. It is all the more remarkable then that the one arcade appearance and content document that has survived the years is the original layout book that reflects the experience learned in the first Golden Age of arcade machines. Noted historian Daniel J. Boorstin, Library of Congress Emeritus, may have identified a reason for its survival. In his essay "Hidden History: Exploring Our Secret Past" (Harper & Row, 1987), Boorstin talks of *The Law of the Survival of the Collected and Protected: What Goes Into Files*, however random and for whatever reason. The latter may explain why a modest 36–page booklet entitled "Mills Penny Arcades," and coded "Form 1443. 6-10-07-SM.K.P." (meaning 5,000 copies were printed by the Mills Novelty Company in-house print shop on Monday, June 10, 1907; dried, and then saddle stitch bound by the end of the week) has lived to tell its graphic story to future generations. In its day this had to be an important booklet, with most of its copies thumb worn and finally torn as its more serious readers built and furnished the arcades illustrated in its pages. Yet two (in the hands of collectors Bob Legan and author Dick Bueschel, with both copies found by Bueschel) virtually mint examples, obviously buried in files for years, surfaced about a dozen years ago in opposite ends of the country.

"Mills Penny Arcades" is a bellwether book, with nothing like it published by any of the other arcade machine manufacturers. One might have expected something of this nature from The Caille Brothers Company of Detroit or the Rosenfield Manufacturing Company of New York, but they never did it. If they had they would have advertised the availability, just as the Mills Novelty Company did when "Mills Penny Arcades" was available for distribution. The Mills ad is arrogant — typical of Herbert S, Mills, the firm's founder — with a headline stating "I Will Start You in a Business" over a picture of "H. S. Mills, Pres." Near the end of the body copy the small, single-column 4-inch ad states"...write me fully the amount of capital you have to invest, your location and all the facts, and I will give you the benefit of my expert knowledge. I will also send you FREE my *Book on Arcades,* a complete encyclopedia on the subject. Don't write me unless you mean business — this book is expensive and my time is valuable. Address me personally, H.S. Mills, President Mills Novelty Co., Private Office, 103-E Mills Building, Jackson Boulevard and Green Street, Chicago."

The ad ran in the August 17, 1907 issue of *The Billboard* magazine, and only a few times thereafter. In advertising terms the book was a "hard request" as it took a letter to Mills to get it, quickly shaking out the "coupon clippers" that just wanted a copy to stick in their files. The wonder is that any copies at all survived, based on the short print run, short offering and hard usage. The booklet itself is a wonder, indeed collecting virtually all of the arcade set-up and operating knowledge to date in order to get an arcade operator started as well as sell Mills arcade machines. The compilation provides a complete insight into the art and business of the Penny Arcade from its beginnings through the critical formulation years of 1902-1905, updated to 1907 only in terms of the later and improved models of the Mills machines that made the fully equipped arcade possible. In their early years, the arcades were dominated by the layout formats established by the Edison KINETOSCOPE parlors that began in 1894. By 1902, when the parlor operators first faced a choice between remaining in the coin-operated arcade business or going full bore into the projected motion picture business, soon to be known as the Nickelodeon, the split that would ultimately sever these two branches of the same field of public amusements began to widen rapidly. By 1905, with the sudden growth of the screen theatre building based in the availability of the first full length feature films, the two industries were forever separated.

It was about the time of the initial split between coin-ops and movies in 1902-1903 that the Mills Company decided to make its run to become the dominant force in the Penny Arcade field. Its major competitor at the time was The Caille Brothers Company in Detroit, with A. Arthur Caille, the promotional minded younger brother of the Caille Brothers team getting more and more interested in projected films. The Caille Bros. line of coin-operated arcade machines continued to grow in this period, but lost much of its developmental and new model momentum when Art Caille opened The Casino, Detroit's first motion picture theatre, in 1905. H. S. Mills, in Chicago, never allowed this distraction to alter his plan to become the King of Arcade Machines even though the Mills family did get involved in the early motion picture theatres, as well as amusement parks, in Chicago. Mills not only made arcade machines but also became the leading light behind a string of Mills Edsonia and Mills Wonderland arcades in a number of American as well as Canadian cities. The high point came in the summer of 1904 when the enormous Mills Edsonia building at the Louisiana Purchase Exposition at St. Louis made more money than any other outside exhibition located on the Pike. Packed to the gills with Mills machines and paying concessions, the Mills Edsonia (the building was called, in dramatic H. S. Mills language, "The Spectatorium") drew a crowd of ten thousand people a day, taking in thousands of pennies. With that, the full-blown, Mills-inspired Penny Arcade business was fully launched, with H. S. Mills the most experienced man in the field.

The content of "Mills Penny Arcades" fully reflects this experience, telling the reader how to pick a location, incorporate a company, modify a building and get started in the arcade business with various degrees of capital with Mills equipment lists to match. Some of the more interesting recommendations instruct the reader to pick an arcade location "...anywhere where people are either passing or are compelled to wait", with the arcade hours matched to this traffic to catch customers from "...an all-day run of people from eight o'clock in the morning until eleven at night." In terms of the building facilities and the arcade environment "...the front of the room should be taken out, and an open front with all collapsible doors which may be left wide open in warm weather" installed, with the interior based on "...using a set of our blueprints and specifications which describe in detail the drawings

herein" as contained in the booklet. And when it came to equipment, and the recommended lists of Mills machines, "All have been thoroughly tried in our own Arcades and we recommend them." To hedge the bet against the possible loss of a budding arcade operator that wouldn't make up his mind if he wanted to be in the Penny Arcade or Nickelodeon business, "Mills Penny Arcades" notes that the Mills Novelty Company can also "...supply Moving Picture Machines complete with curtains" to show in the corner of an arcade as had been done since the late 1890s before the Stare Show, Electric Theatre and Nickelodeon operators went their own way.

Here, then, is a reproduction of the complete "Mills Penny Arcades" booklet, perhaps the single most important piece of printed literature ever produced for the field of Penny Arcades. It is hoped its publication will inspire serious museums and universities that provide advanced degrees in Folk Material Culture to take up the subject, as well as encourage preservation groups to fight for the restoration of a true Penny Arcade of the 1903-1907 period. Unquestionably it will provide inspiration for advanced collectors to create or modify their display environment in keeping with the true size and appearance of an arcade. For the rest — the machine collectors, restorers, antique dealers, historians and general enthusiasts — it is provided to add that missing element of period charm that is suggested but not fully delivered by machines that sit singly and silently, waiting for a coin to bring them to life.



Mills Penny Arcades

Mills Novelty Co.
Mills Building
Jackson Boulevard and Green Street
Chicago, Ill., U. S. A.

Introduction

THIS book was prepared for the purpose of affording those interested in an investment in Penny Arcades some reliable data in regard to the most practical method of fitting up, equipping, opening and operating Arcades.

Our experience as the largest manufacturers in the world of all kinds of Arcade machines and covering a period of fifteen years, we believe, justifies us in feeling qualified to recommend to our customers and the public in general, such outfits as are best calculated to afford the most satisfactory results—that is, those which will yield the largest amount of profit on the capital invested.

There are a number of points upon which those contemplating opening Arcades should be informed, and we have endeavored herein to supply that information in a brief and concise form.

Mills Novelty Co.

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MILLS PENNY ARCADES

EXPERIENCE has shown that there is an ever present and ever increasing demand for just what the Penny Arcade provides. It has passed the experimental stage and has become a permanent institution, as important as the theatre, the opera or the circus. The enterprise is a high grade one, well worthy of the attention of any substantial, dignified business man, and there never has been a time when Penny Arcades have paid such tremendous profits as at present. The success of the venture is no longer confined to the larger cities, as it is a daily occurrence for us to receive reports from the operators of arcades in smaller cities where large profits are being earned.

Wonder might be excited at the seeming lack of business judgment on the part of any person who would pay from $500 to $1,000 a month rent for a location in which to establish a penny business. But it pays, and pays well. Recently $4,500 was paid as rent for a room in a building prominently located in State Street, Chicago, which was being torn down. The Arcade owner occupied the room just fifty-three days, but despite the fact that his rent amounted to nearly $100 a day, his net profits exceeded $6,000.

A few years ago, the idea seemed to prevail that to succeed in the Arcade business it was essential that the operator be a man of extreme sporting proclivities, but such is certainly not the case. It really matters but little what the personal life and habits of the operator are, as his identity is of little value. It is not like many businesses where a large personal following is necessary to keep up patronage. Many of those most largely interested in Arcades are at the head of big mercantile houses. Others are prominent in the professions. The public does not know nor care who owns an Arcade. All it cares about is whether the place is conducted in a neat and orderly manner and whether the machines are attractive, novel and afford amusement.

But little help is required, in most cases a manager cashier and porter being all required. Someone to meet the patrons of an Arcade is not necessary. The business is a strictly cash one. The cashier merely furnishes change and the manager sees that order is maintained.

Generally speaking, there are two classes of places in which Penny Arcades may be operated. The usual one is the city location, a store room, located in the most populous portion of the city, which should be suitably arranged to receive the Arcade equipment. This kind of location is available for use the year round. Adjacent to nearly all cities now-a-days, are amusement parks, which are conducted during the summer months only. Various attractions are offered in these parks for the amusement of the public, but none which attract such crowds or which make so much money for their owners as does the Penny Arcade. A park is really an ideal Arcade location. In most instances, the manager of a park is glad to provide space in which to operate an Arcade for a percentage of the receipts. Machines may be operated in a park during the summer and moved to a city location in the fall, and thereby kept in service the year round.

An Arcade should be equipped with modern, up-to-date money-making machines or it cannot succeed. In the following pages we have made up outfits of machines, suitable for use in Arcades of various sizes. They are all Mills Machines and are the best money and brains can produce. All have been thoroughly tried out in our own Arcades and we recommend them as perfectly adapted to Arcade use. Generally speaking, "all one need know about a slot machine is that it is a Mills."

Location, Etc.

One of the most essential features to the success of an Arcade is the location, which should be absolutely the best obtainable. It should be on a prominent thoroughfare or on a corner, at a street car transfer point, at an amusement park or anywhere where people are either passing or are compelled to wait.

Always select the busy side of a street. When selecting a location, watch the crowd passing for twelve hours, and be sure that it is a **continuous crowd**, and not the crowd going or coming from business or the theater. The location which is most desirable for an Arcade is where there is an all-day run of people from eight o'clock in the morning until eleven at night.

Do not hesitate to pay a high rental or a bonus to get the right location. The rent would not be high if the location were not a good one. Bear in mind, that the more people who visit an Arcade the more money it will make, and that more people will enter its doors if it is located where people continually pass and congregate than would otherwise be the case.

An Arcade should possess an inviting air of respectability. It must be well lighted. Do not stint light. Let there be an bundance of light at the front particularly. The room should also be pleasingly decorated and in colors which reflect rather than deaden light. The cashier selected should be a woman whose appearance indicates refinement, for many of the patrons of an Arcade are women and children.

Getting Started in the Arcade Business.

Capital must be used with which to fit up and equip an Arcade, but the amount necessary naturally depends upon the size of the city and size of the room in which the Arcade is to be located. The amount invested should be sufficient to equip an Arcade on such a scale as will make it in keeping with its surroundings. It is not necessary that the decorations and furnishings be elaborate, but they should be neat and tasty. The machines should also be in sufficient variety to attract patrons from one to another, and so encourage play.

An individual having the requisite amount of capital can, of course, equip and operate an Arcade on his own account.

Many of our customers have found that they did not have enough capital to open as large an Arcade as they desired to, after looking the situation over, and a great number of these have either borrowed enough to carry out the enterprise, or formed a partnership with some other party or friend and so got started.

Still another way in which to start in the business, is to form a company and incorporate with a capital stock of enough to equip and start up an Arcade, this capital being subscribed by various parties, whose interests would be represented by the amount of their various subscriptions.

We have assisted several parties in forming corporations, whose original idea was simply to open a single Arcade, but this first Arcade, when started, was found to be so profitable, that the capital stock of the company was increased from time to time, by the sale of further stock, and more Arcades opened, either in different locations in the same city, or in a string of cities so situated that all the Arcades might be conveniently managed from one central point.

This plan has many features to commend it, as while a single Arcade will make big money, a number of them conducted under one management will make much more proportionately, as many economies may be practiced under the latter condition not practical in connection with running a single Arcade. For instance, in exchanging records, songs, pictures, moving picture films, signs, etc., a supply of these articles could be kept circulating from one Arcade to another, until all had used them. Then start and repeat the operation, as by the time they had been around once, they would be sufficiently fresh to use again.

It is a simple matter to incorporate a company, legal assistance being really unnecessary. The instructions below, if followed, will enable anyone to proceed satisfactorily.

Instructions for Incorporating a Company.

First, decide upon the amount of money it will be necessary to raise, in order to fit up and equip the one or more Arcades it is desired to open, and make that amount

the capital of the company. Then have the various parties who are to take stock, subscribe for the same on a sheet, ruled and headed, as follows:

We, the undersigned, hereby subscribe for the number of shares of stock set opposite our respective names, in a company to be incorporated with a capital stock of $—— for the purpose of establishing one or more Mills Penny Arcades, and agree to pay for the said shares at the rate of $—— per share, when called upon to do so.

NAMES	No. Shares Subscribed for	Amount	

When the capital stock has all been subscribed for, write to the secretary of state, at the state capital of the state under whose laws it is desirable to incorporate, and he will, upon request, send such forms as it is necessary to fill out and file in his office.

These forms consist of a statement setting forth the name of the company, the purpose for which the company is formed, the amount of the capital stock, the number and amount of shares, the location of the principal office and the duration of the company.

This statement must be filed with the secretary of state, who will then issue a license to commissioners to solicit stock subscriptions. In this case the subscriptions having already been obtained as above suggested, it simply becomes necessary to copy off the subscription list on the form furnished by the secretary of state and send it, together with a full report of the proceedings of a meeting of the stock subscribers, to be called by the commissioners, and sworn to by a majority of them, to the secretary of state, who will then issue a certificate of incorporation and the company is ready to proceed to transact business.

At the meeting above referred to, a board of directors must be elected and a set of by-laws for the government of the company adopted. The board of directors will then hold a meeting and elect the officers of the company.

When the certificate of incorporation has been received and the officers elected, stock should be issued to subscribers. Stock certificates and a corporate seal, which may be procured at nominal cost of any good stationer, should be signed by the president and secretary of the company.

The cost of incorporating a company varies in different states, but is nominal. When writing to the secretary of state for forms, ask him what the fees are, and he will inform you.

The by-laws should be simple and yet complete enough to cover the general conduct of the business. We publish herewith, a set of by-laws which will be found to meet most cases. They may, however, be altered to suit conditions as they exist:

BY-LAWS

ARTICLE I.

Stockholders' Meeting.

Annual Meeting. Section 1.—The annual meeting of the stockholders, shall be held at the office of the company in —— on the —— Tuesday in —— of each year, at the hour of two o'clock p. m. Notice of such meeting shall be signed by the secretary and mailed by him to each stockholder at least ten days before said meeting.

Special Meeting. Section 2.—A special meeting of the stockholders may be called by any two stockholders of the company, filing with the secretary at least fifteen days before such meeting, a written call therefor, stating the day, hour and object thereof. Such meeting shall be held at the office of the company and notice thereof shall be given by the secretary as provided for stockholders' annual meeting.

Voting. Section 3.—At all stockholders' meetings, each stockholder shall be entitled to cast one vote for each share of stock owned by him or her. The vote may be cast either in person or by proxy appointed in writing.

Quorum. Section 4.—A quorum shall consist of a majority of the shares of stock outstanding. Stockholders representing less than a quorum can do nothing more than to adjourn the meeting to a future day.

ARTICLE II.

Directors.

Number. Section 1.—The affairs of the company shall be controlled and managed by a board of —— directors, whose terms of office shall be for one year and until their successors are elected and qualified.

Vacancies. Section 2.—Vacancies in the board of directors may be filled by the remaining directors at any regular or special meeting. A majority of the directors voting shall be required to elect.

Regular Meetings. Section 3.—Regular meetings of the board of directors shall be held immediately after the adjournment of the annual stockholders' meeting, which shall be the annual meeting of the board.

Special Meetings. Section 4.—Special meetings of the board of directors may be called at any time by the president or any director, by mailing to each director at least three days prior to such called meeting a written notice, stating the day, hour, object and place of such meeting.

Reports. Section 5.—At each annual meeting of the stockholders the directors shall present a general statement of the business of the preceding year, a report of the financial condition of the corporation, and a report of the condition of the property of the company.

Quorum. Section 6.—A quorum shall consist of —— directors. A smaller number can only adjourn to a future time.

ARTICLE III.

Officers.

Election. Section 1.—The officers of the company shall be a president, secretary and treasurer, who shall perform the usual duties pertaining to their respective offices. All officers shall be elected by the directors at the annual meeting of the board, and as vacancies occur.

Term of Office. Section 2.—The officers shall hold office until the next annual meeting and until their successors are elected and qualified.

Bonds. Section 3.—The directors may require any or all of the officers to give bonds to the company, with good and sufficient security, conditioned upon the faithful performance of their respective duties.

Secretary. Section 4.—The secretary of the company, shall be secretary of the board of directors.

Contracts. Section 5.—No officer or director of the company shall enter into any contract or agreement, verbal or written, on behalf of the company, without first obtaining the authority of the board of directors thereto.

ARTICLE IV.

Stock.

Transfer of Stock. Section 1.—Shares of stock must be transferred upon the books of the company either in person or by attorney, on surrendering the certificate to the secretary for cancellation and signing such transfer in the regular transfer book of the company, whereupon a new certificate shall be issued in lieu of the certificate so cancelled.

ARTICLE V.

Order of Business.

Order of Business. Section 1.—At all directors' and stockholders' meetings, the order of business shall be as follows:

1. Reading of minutes of previous meeting and action thereon.
2. Reports of officers.
3. Reports of committees.
4. Unfinished business.
5. At the annual stockholders' meeting, election of directors. At the annual directors' meeting, election of officers.
6. New business.

ARTICLE VI.

Amendments.

Amendments. Section 1.—The foregoing by-laws may be altered, amended or repealed by a majority of the board of directors at any meeting of the board.

Fitting Up a Building.

Much latitude is allowable in remodeling and fitting up a room or building for Arcade purposes. In smaller places a much more simple plan of decoration may be employed than in a large city, where the room should be arranged, fitted up and decorated in a manner to conform to the size of the Arcade.

In the following pages we describe Arcade Outfits of various sizes, ranging in price from about $1,000 up to $5,000. We also state about the size room or space necessary in which to install these various outfits, and give general specifications for the carpenter, decorative and electrical work necessary to fit up rooms of the proper sizes, in accordance with the drawings shown.

We also state approximate cost of doing the work. It should be borne in mind, however, that the cost of building, decorating and doing electric wiring varies in different sections of the country, but the costs given are about what the work should cost under ordinary conditions.

A room for a small Arcade may be fitted up in a very simple and inexpensive manner, as it is not necessary that the building be remodeled to the extent that would be desirable for a larger place. The arrangement shown herein for rooms for Arcade Outfits Nos. 1, 2 and 3, it will be noted, are very simple, but in our estimation are sufficiently elaborate to use in connection with the equipment of machines they are to contain. Of course in case of each of the six outfits, we show in this book, some items may be omitted or added to suit the individual case. The matter which directly follows, therefore, on the subject of arrangement and fitting up of rooms, should be construed as applying to the larger Arcades only.

Many parties wishing to establish Arcades are not experienced in having carpenter, decorative and electrical work done, but by using a set of our blue prints and specifications which describe in detail the drawings herein, and utilizing the form of contract we are glad to supply to those buying Arcade outfits of us, it becomes a very simple matter for anyone to procure bids for the work and have it done, simply seeing that the work as it progresses is being done in accordance with the contract and specifications. It is always advisable to secure bids from two or more contractors for the same job, as by so doing, it is generally possible to secure better prices.

Have as many copies of the contracts and specifications made as there are bidders on each job, being careful to fill in the detailed information in each case in the spaces left blank in both contracts and specifications, to suit the individual case, and give duplicate copies to bidders on the same job, so that their bids may be made on identically the same work.

Bearing in mind what has been said heretofore in reference to a location, the front of the room selected should be taken out, and an open front with collapsible doors, which may be left wide open in warm weather, should be put in. This front may be either elaborate or simple, as the taste of the owner dictates. Generally speaking, the drawings of fronts herein shown, will be found suitable for Arcades to contain the equipment of machines which accompanies them.

A hardwood floor in the Arcade is preferable, but if the floor in the room to be used is not in the best of condition, cover it all over with imported linoleum of a pattern in imitation of marble or tiling. Do not use cheap linoleum, as the pattern will wear off where people pass in front of the machines and other spots where there is much travel.

A space should be left in front for an entrance lobby, as shown in the drawings, and see that there are no steps at the entrance. Across the lobby, in the winter, should extend a steel mesh mat, which will collect a large amount of dirt and dust, which would otherwise be tracked into the Arcade. The side walls of the lobby should have bulletin boards, neatly painted, upon which to display advertising matter. Plenty of light should be used in the lobby, so as to attract attention to the Arcade and invite passersby to enter.

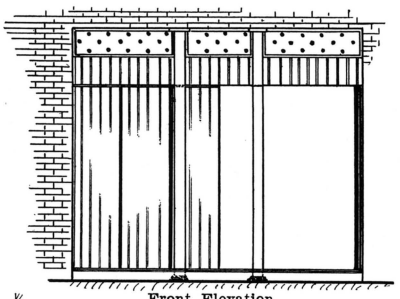
On the front of the building, by all means, have a steady burning electric sign, reading "Penny Arcade," "Penny Vaudeville," or some other suitable name, and add some suitable expression, such as "Everything For a Penny."

The walls of the Arcade should be neatly papered. A pleasing and durable decoration is obtained by covering the walls to a height of about five feet above the baseboard with burlap and above that with paper. The burlap is not easily torn or disfigured should it be hit by machines, in moving them about, and a chair rail to separate the burlap from the paper not only provides a finish, but prevents the machines placed along the walls from marring the decorations. The walls above the machines may be left plain or be paneled in an inexpensive way with molding placed on top of the paper.

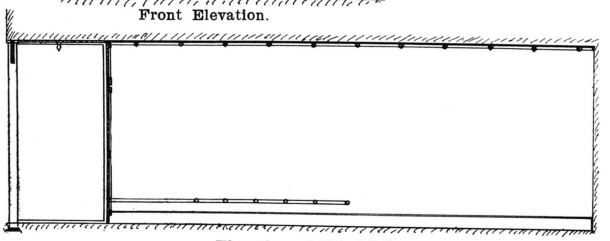
The electric wiring should all be done in accordance with the rules of the Board of Fire Underwriters. The electrical contractor will be familiar with them. In the larger Arcades it is best to run a wire along both sides of the room, about eighteen inches from the floor, with receptacles about twenty-two inches apart, so that the machines may be moved about at will, and those requiring electric current, connected up at any point. The lights in the Arcade will be most effective if placed along the cornice and walls. There should also be clusters on the ceiling. We make a handsome, bell-shaped, ceiling chandelier particularly for Arcade use, which is not only very decorative, but an economical lighting fixture as well.

If space permits, an office and repair shop should be provided in the rear or at some other convenient place in the Arcade. Mills machines are well made and not liable to get out of order, but occasionally one will require repairs, and rather than do such work out in the Arcade, where anyone may see the mechanism of the machine, it is best to have a little shop in which the work may be done in private and to advantage. It will be noted that a complete repair outfit of tools is included in each Arcade outfit listed herein.

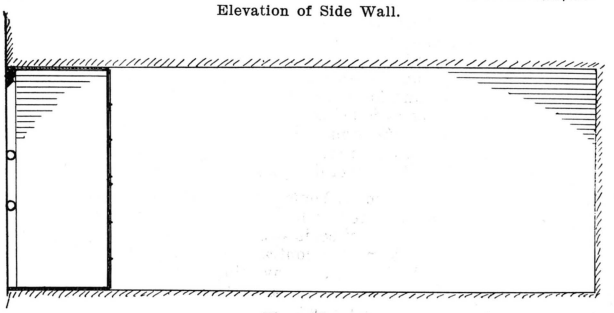
For larger Arcades than are listed herein it would be best to let us make up a special set of plans and specifications, as there are many features connected with fitting up a large Arcade, not practical in a smaller one, with which we are familiar. We will be glad to get up special plans for Arcades upon request.



Front Elevation.



Elevation of Side Wall.



Floor Plan.

Arcade Outfit No. 1.

Size of room required about 15x40 feet, or 600 square feet. This size room allows space for additional machines being put in later, if desired.

Help Needed and Cost per Week.

1 Manager	$15.00
1 Lady Cashier	7.00
1 Porter to clean out (use only part of his time)	5.00
	$27.00

General Specifications.

Lay out the room with a 7-foot lobby in front, and if it is desired to incur the extra expense necessary, partition off 7 feet in the rear for office and repair room.

Carpentry Work—

Take out old front of building and put in ornamental wood soffit across front and six collapsible doors just back of lobby. Doors to be made of ⅞-inch T. & G. ceiling, and space above them to be filled in with same material. Put in two wood signboards at sides of lobby, extending from floor to ceiling, finished with molding. Cover ceiling of lobby with ⅞-inch T. & G. ceiling. All painted one coat..... $70.00

Electric Work—

Wiring for 13 machine connections.
Wiring for 41 16 c. p. lamps..... 54.00

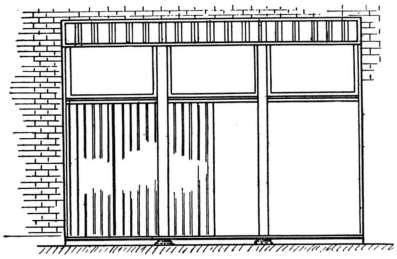
Total $124.00

Note—We will furnish blue prints and specifications giving complete details of these drawings upon request, to parties buying Arcade outfits of us.

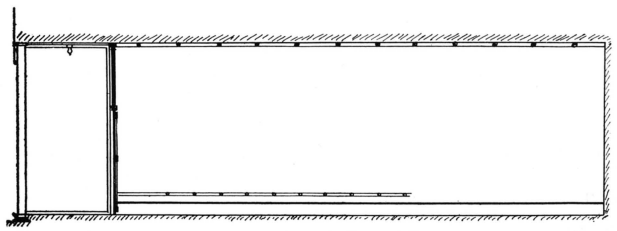
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Equipment of Machines for Arcade Outfit No. 1.

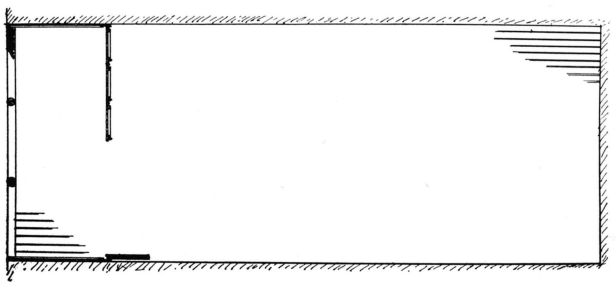
6	Auto Stereoscopes, 1907 Model, Front Wind or Cathedral Front, with Sign Frames	$ 37.50	$225.00
9	Sets of 15 Views each with Signs for Auto Stereoscopes	2.50	22.50
4	Quartoscopes with Sign Frames	35.00	140.00
8	Sets of 4 doz. Views each, with Signs for Quartoscopes	6.50	52.00
2	Automatic Phonographs with Signs and Frames and 1 8-inch Record each	75.00	150.00
2	Extra 8-inch Records and Signs, assorted subjects	.85	1.70
1	New Owl Lifting Machine		35.00
1	Grip and Lung Tester, with Steel Stand and Sign and Frame		37.50
1	Bag Punching Machine		75.00
1	Success Fortune Teller, with Sign and Frame		17.00
1	Weighing Machine		35.00
1	Imperial Electric Machine with Stand, Sign and Frame		17.50
1	Souvenir Postal Card Machine with 1,000 Cards and Sign and Frame		25.00
1,000	Extra Postal Cards		3.00
1	Windmill Candy Machine, without Candy		35.00
4	Hand-Painted, Framed Wall Signs	2.00	8.00
1	Combination Money Changer, for Pennies		3.00
1	Cashier's Desk with Glass Top and Sign		25.00
1	Automatic Phonograph with Horn Attachment with Sign and Frame and 1 10-inch Record, arranged to run continuously		125.00
4	Extra 10-inch Records and Signs for Automatic Phonograph	1.05	4.20
1	Repair Outfit		10.00
1	Key Board with Lock		5.00
24	Key Rings	.10 (doz)	.20
48	Key Tags, Cardboard, Metal Bound	.10 (doz)	.40
18	Coin Bags	.15	2.70
100	Perforated 1c Brass Slugs		.35
50	Weekly Statement Sheets (no charge)		
	Total		$1,055.05



Front Elevation.



Elevation of Side Wall.



Floor Plan.

Arcade Outfit No. 2.

Size of room required, about 18x45 feet, or 810 square feet. This size room allows space for additional machines being put in later, if desired.

Help Needed and Cost per Week.

1 Manager	$15.00
1 Lady Cashier	7.00
1 Porter, to clean out (use only part of his time)	5.00
	$27.00

General Specifications.

Lay out the room with a 7-foot lobby in front, and if it is desired to incur the extra expense necessary, partition off 7 feet in the rear for office and repair room.

Carpentry Work—

Take out old front of building and put in ornamental wood soffit across front, and six collapsible doors, just back of lobby. Doors to be made of ⅞-inch T. & G. ceiling. Put in transom with three lights D. T. glass above doors. Put in two wood signboards at sides of lobby, extending from floor to ceiling, finished with molding. Cover ceiling of lobby with ⅞-inch T. & G. ceiling. All painted one coat..... $ 83.00

Electric Work—

Wiring for 19 machine connections.
Wiring for 48 16 c. p. lamps..... 67.00

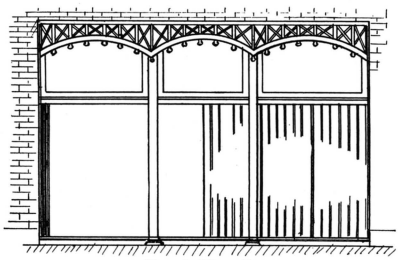
Total $150.00

Note—We will furnish blue prints and specifications giving complete details of these drawings, to parties buying Arcade outfits of us, upon request.

8

Equipment of Machines for Arcade Outfit No. 2.

8	Auto Stereoscopes, 1907 Model, Front Wind or Cathedral Front, with Sign Frames	$ 37.50		$300.00
12	Sets of 15 Views each, with Signs for Auto Stereoscopes	2.50		30.00
2	Illustrated Song Machines with Signs and Frames, 1 set of 12 Views and 1 8-inch Record each	100.00		200.00
2	Extra Sets of 12 Views each with Signs and 8-inch Records, for Illustrated Song Machines	3.85		7.70
4	Quartoscopes with Sign Frames	35.00		140.00
8	Sets of 4 dozen Views each with Signs for Quartoscopes	6.50		52.00
2	Automatic Phonographs with Signs and Frames and 1 8-inch Record each	75.00		150.00
2	Extra 8-inch Records and Signs, assorted subjects	.85		1.70
1	New Owl Lifting Machine			35.00
1	New Owl Searchlight Lifting Machine			70.00
1	Grip and Lung Tester with Steel Stand and Sign and Frame			37.50
1	Bag Punching Machine			75.00
1	Success Fortune Teller with Sign and Frame			17.00
1	Miniature Perfume Sprayer with Stand and Sign and Frame and Perfume			35.00
1	Hat Blower			75.00
1	Weighing Machine			35.00
1	Imperial Electric Machine with Stand, Sign and Frame			17.50
1	Souvenir Postal Card Machine with 1,000 Cards and Sign and Frame			25.00
1,000	Extra Postal Cards			3.00
1	Windmill Candy Machine, without Candy			35.00
4	Hand-Painted, Framed Wall Signs	2.00		8.00
1	Combination Money Changer for Pennies			3.00
1	Cashier's Desk with Glass Top and Sign			25.00
1	Automatic Phonograph with Horn Attachment, with Sign and Frame and 1 10-inch Record arranged to run continuously			125.00
4	Extra 10-inch Records and Signs for Automatic Phonograph	1.05		4.20
1	Repair Outfit			10.00
1	Key Board with Lock			5.00
24	Key Rings	.10	(doz)	.20
48	Key Tags, Cardboard, Metal Bound	.10	(doz)	.40
18	Coin Bags	.15		2.70
100	Perforated 1c Brass Slugs			.35
50	Weekly Statement Sheets (no charge)			
	Total			$1,525.25



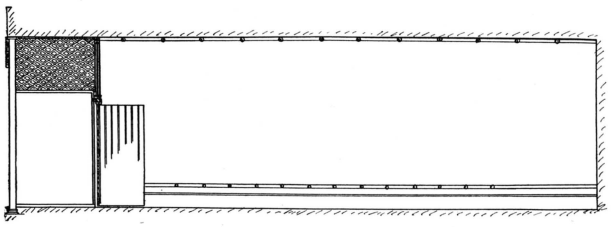
Front Elevation.

Arcade Outfit No. 3.

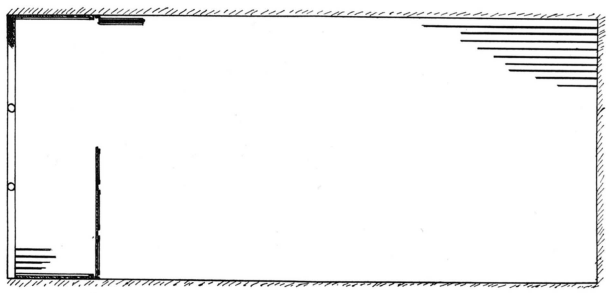
Size of room required about 20x45 feet, or 900 square feet. This size room allows space for additional machines being put in later, if desired.

Help Needed and Cost per Week.

1 Manager	$20.00
2 Lady Cashiers	14.00
1 Porter, to clean out	10.00
	$44.00



Elevation of Side Wall.



Floor Plan.

General Specifications.

Lay out the room with a 7-foot lobby in front and if it is desired to incur the extra expense necessary, partition off 7 feet in the rear for office and repair room.

Carpentry Work—

Take out old front of building and put in ornamental wood soffit across front, and six collapsible doors, just back of lobby. Doors to be made of ⅞-inch T. & G. ceiling. Put in transom with three lights D. T. glass above doors. Put in two wood signboards at sides of lobby, extending 9 feet from floor, finished with molding. Cover ceiling and side walls of lobby down to top of signboards with ornamental sheet steel. All painted one coat. $108.00

Electric Work—

Wiring for 25 machine connections.	
Wiring for 67 16 c. p. lamps	92.00
Total	$200.00

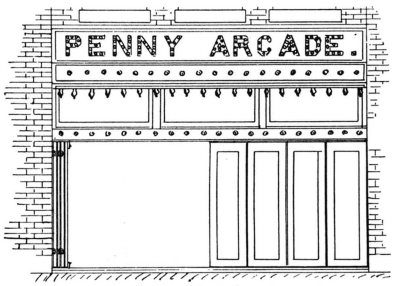
Note—We will furnish blue prints and specifications giving complete details of these drawings, to parties buying Arcade outfits of us, upon request.

10

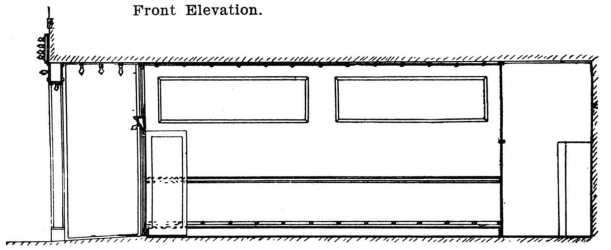
Equipment of Machines for Arcade Outfit No. 3.

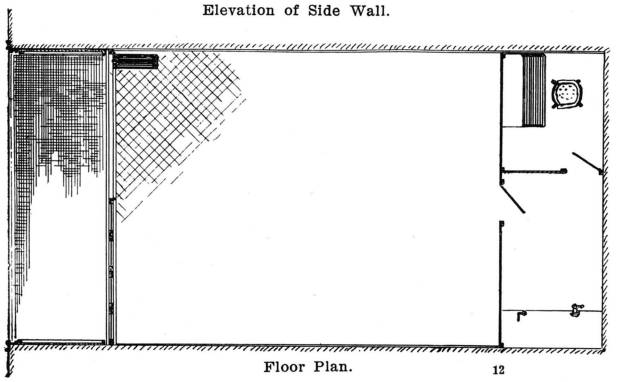
10	Auto-Stereoscopes, 1907 Model, Front Wind or Cathedral Front, with Sign Frames	$ 37.50	$375.00
15	Sets of 15 Views each, with Signs for Auto-Stereoscopes	2.50	37.50
5	Quartoscopes with Sign Frames	35.00	175.00
10	Sets of 4 dozen Views each, with Signs for Quartoscopes	6.50	65.00
3	Illustrated Song Machines with Signs and Frames, 1 Set of 12 Views and 1 8-inch Record, each	100.00	300.00
3	Extra Sets of 12 Views each, with Signs and 8-inch Records for Illustrated Song Machines	3.85	11.55
3	Automatic Phonographs with Signs and Frames and 1 8-inch Record each	75.00	225.00
3	Extra 8-inch Records with Signs, assorted subjects	.85	2.55
1	New Owl Lifting Machine		35.00
1	New Owl Chimes Lifting Machine		70.00
1	Submarine Lung Tester		100.00
1	Flashlight Grip Machine with Stand		55.00
1	Bag Punching Machine		75.00
1	New Pneumatic Punching Machine		50.00
1	Horoscope Fortune Teller with 4 Sets, 1,000 Cards and Sign and Frame		60.00
1,000	Extra Cards for Horoscope Fortune Teller		1.75
1	Pair Jumbo Success Fortune Tellers with Signs and Frames (1 for Ladies and 1 for Gentlemen)		35.00
1	Weighing Machine		35.00
1	Imperial Electric Machine with Stand and Sign and Frame		17.50
1	Miniature Perfume Sprayer with Stand and Sign and Frame and Perfume		35.00
1	Souvenir Postal Card Machine with 1,000 Cards and Sign and Frame		25.00
1,000	Extra Postal Cards		3.00
1	Windmill Candy Machine, without Candy		35.00
5	Hand-painted, Framed Wall Signs	2.00	10.00
1	Combination Money Changer for Pennies		3.00
1	Cashier's Desk with Glass Top and Sign		25.00
1	Automatic Phonograph with Horn Attachment, with Sign and Frame and 1 10-inch Record, arranged to run continuously		125.00
4	Extra 10-inch Records and Signs for Automatic Phonograph	1.05	4.20
1	Repair Outfit		10.00
1	Key Board with Lock		5.00
36	Key Rings	.10 (doz)	.30
60	Key Tags, Cardboard, Metal Bound	.10 (doz)	.50
24	Coin Bags	.15	3.60
100	Perforated 1c Brass Slugs		.35
50	Weekly Statement Sheets (no charge)		
	Total		$2,010.80

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Front Elevation.


Elevation of Side Wall.


Floor Plan.

12

Arcade Outfit No. 4.

Size of room required about 20x50 feet, or 1,000 square feet. **This size room allows space for additional machines being put in later, if desired.**

Help Needed and Cost per Week.

1 Manager	$20.00
2 Lady Cashiers	14.00
1 Porter, to clean out	10.00
	$44.00

General Specifications.

Lay out the room with a 7-foot lobby in front and partition off 7 feet in the rear for office and repair room, per floor plan.

Carpentry Work—
Take out old front of building and replace with new one, per drawing, putting in wood box soffit across front, collapsible front doors with D. T. glass panels and three light D. T. glass transom. Put in partition in rear, extending from floor to ceiling, of ⅞-inch T. & G. ceiling, with two doors of same material. Also, cross partition extending 7 feet from the floor, per floor plan. Put in chair rail around the room, two signboards to extend from floor to ceiling, finished with molding at sides of lobby, sheet steel ceiling on lobby ceiling. Put in wood floor in lobby laid diagonally and pitched from front doors to sidewalk $254.00

Electric Work—
Wiring for 32 machine connections.
Wiring for 110 16 c. p. lamps 142.00

Decorating—
Papering side walls and ceiling with good quality paper and burlap, 4 feet 6 inches from floor on side walls. Painting, two coats 87.00

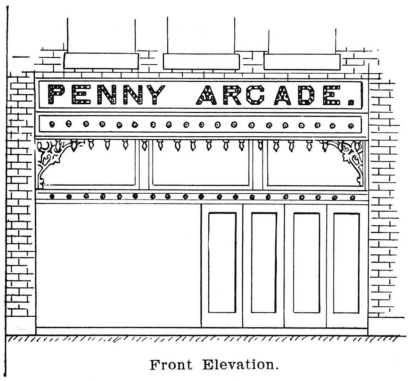
Total $483.00

Note—We will furnish blue **prints and** specifications giving complete **details of these** drawings, to parties buying **Arcade outfits** of us, upon request.

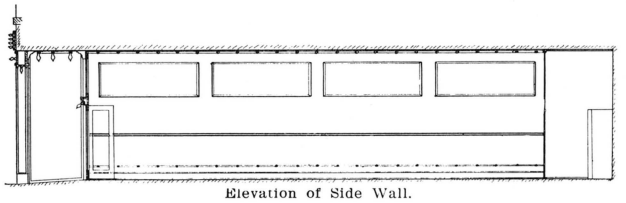
Equipment of Machines for Arcade Outfit No. 4.

12	Auto Stereoscopes, 1907 Model, Front Wind or Cathedral Front with Sign Frames	$ 37.50	$450.00
18	Sets of 15 Views each, with Signs for Auto Stereoscopes	2.50	45.00
5	Illustrated Song Machines with Signs and Frames, 1 set of 12 Views and 1 8-inch Record each	100.00	500.00
5	Extra Sets of 12 Views each, with Signs and 8-inch Records for Illustrated Song Machines	3.85	19.25
5	Quartoscopes with Sign Frames	35.00	175.00
10	Sets of 4 doz. Views each, with Signs for Quartoscopes	6.50	65.00
4	Automatic Phonographs with Signs and Frames, and 1 10-inch Record each	85.00	340.00
4	Extra 10-inch Records with Signs, assorted subjects	1.05	4.20
1	New Owl Lifting Machine		35.00
1	New Owl Chimes Lifting Machine		70.00
1	Submarine Lung Tester		100.00
1	High Ball Lung Tester		100.00
1	Hat Blower		75.00
1	Flashlight Grip Machine with Stand		55.00
1	Bag Punching Machine		75.00
1	New Pneumatic Punching Machine		50.00
1	Horoscope Fortune Teller with 4 slots, with 1,000 Cards and Sign and Frame		60.00
1,000	Extra Cards for Horoscope Fortune Teller		1.75
1	Madame Neville Palmist with 1,000 letters		110.00
1,000	Extra Letters for Madame Neville Palmist		1.75
1	Pair Jumbo Success Fortune Tellers with Signs and Frames (1 for Ladies and 1 for Gentlemen)		35.00
1	Weighing Machine		35.00
1	Large Electric Shock Machine		100.00
1	Lady Perfume Sprayer with Plate Glass Front and Perfume, and Sign and Frame		100.00
1	Souvenir Postal Card Machine with 1,000 Cards and Sign and Frame		25.00
1,000	Extra Postal Cards		3.00
1	Windmill Candy Machine, without Candy		35.00
5	Hand-Painted, Framed, Wall Signs	2.00	10.00
1	Combination Money Changer for Pennies		3.00
1	Cashier's Desk with Glass Top and Sign		25.00
1	Automatic Pianova, with 1 roll of Music		300.00
2	Extra Music Rolls for Pianova (4 Pieces to the Roll)	2.50	5.00
1	Repair Outfit		10.00
1	Key Board with Lock		5.00
36	Key Rings	.10 (doz)	.30
60	Key Tags, Cardboard, Metal Bound	.10 (doz)	.50
24	Coin Bags	.15	3.60
100	Perforated 1c Brass Slugs		.35
50	Weekly Statement Sheets (no charge)		
	Total		$3,027.70

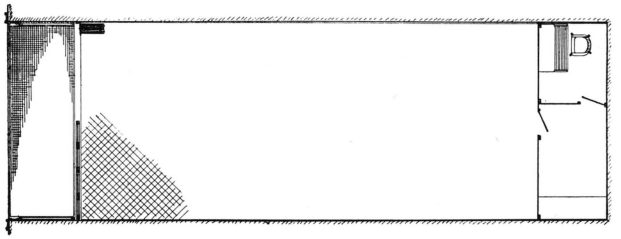
13



Front Elevation.



Elevation of Side Wall.



Floor Plan.

Arcade Outfit No. 5.

Size of room required about 20x70 feet, or 1,400 square feet. This size room allows space for additional machines being put in later, if desired.

Help Needed and Cost per Week.

1 Manager	$25.00
2 Lady Cashiers	14.00
1 Porter, to clean out	10.00
1 Repair Man	12.00
	$61.00

General Specifications.

Lay out the room with a 7-foot lobby in front and partition off 7 feet in the rear for office and repair room, per floor plan.

Carpentry Work—

Take out old front of building and replace with new one, per drawing, putting in wood box soffit across front, collapsible front doors with D. T. glass panels and three light D. T. glass transom, center light to swing. Put in partition in rear, extending from floor to ceiling, of ⅞-inch T. & G. ceiling, with two doors of same material. Also, cross partition extending 7 feet from the floor, per floor plan. Put in chair rail around the room, two signboards to extend from floor to ceiling, finished with molding at sides of lobby, sheet steel ceiling on lobby ceiling. Put in wood floor in lobby, laid diagonally and pitched from front doors to sidewalk $275.00

Electric Work—

One steady burning electric sign, with words "Penny Arcade" spelled out in lights. Wiring for 46 machine connections. Wiring for 144 16 c. p. lights 244.00

Decorating—

Papering side walls and ceiling with good quality paper and burlap 4 feet 6 inches from floor on side walls. Painting 110.00

Total $629.00

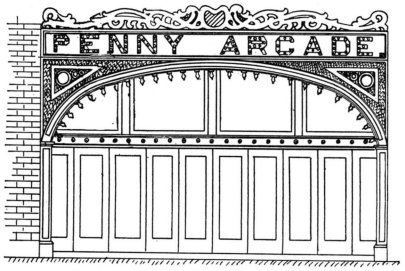
Note—We will furnish blue prints and specifications giving complete details of these drawings, to parties buying Arcade outfits of us, upon request.

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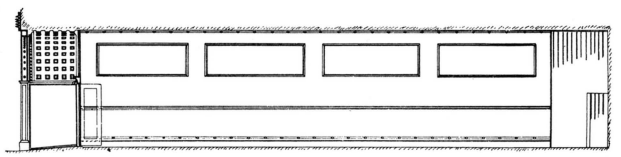
Equipment of Machines for Arcade Outfit No. 5.

20	Auto Stereoscopes, 1907 Model, Front Wind or Cathedral Front with Sign Frames	$ 37.50	$750.00
30	Sets of 15 Views each, with Signs for Auto Stereoscopes	2.50	75.00
5	Illustrated Song Machines with Signs and Frames, 1 set of 12 Views and 1 8-inch Record each	100.00	500.00
5	Sets of 12 Views each with Signs and 8-inch Records for Illustrated Song Machines	3.85	19.25
5	Quartoscopes with Sign Frames	35.00	175.00
10	Sets of 4 doz. Views each with Signs for Quartoscopes	6.50	65.00
5	Automatic Phonographs with Signs and Frames and 1 10-inch Record each	85.00	425.00
5	Extra 10-inch Records with Signs, assorted subjects	1.05	5.25
3	Illusion Machines in a Set, with Signs and Frames		125.00
1	New Owl Lifting Machine		35.00
1	New Owl Chimes Lifting Machine		70.00
1	New Owl Flashlight Lifting Machine		50.00
1	Submarine Lung Tester		100.00
1	High Ball Lung Tester		100.00
1	Hat Blower		75.00
1	Flashlight Grip Machine with Stand		55.00
1	Bag Punching Machine		75.00
1	New Pneumatic Punching Machine		50.00
1	Horoscope Fortune Teller with 4 slots with 1,000 Cards and Sign and Frame		60.00
1,000	Extra Cards for Horoscope Fortune Teller		1.75
1	Madame Neville Palmist with 1,000 letters		110.00
1,000	Extra Letters for Madame Neville Palmist		1.75
1	Pair Jumbo Success Fortune Tellers with Signs and Frames (1 for Ladies and 1 for Gentlemen)		35.00
1	Wizard Fortune Teller with Stand and Sign and Frame		13.50
1	Weighing Machine		35.00
1	Cupid Postoffice with 1,000 Letters		100.00
1,000	Extra Letters for Cupid Postoffice		1.75
1	Large Electric Shock Machine		100.00
1	Imperial Electric Machine with Stand and Sign and Frame		17.50
1	Doctor Vibrator with Sign and Frame		150.00
1	Lady Perfume Sprayer with Plate Glass Front and Sign and Frame and Perfume		100.00
1	Souvenir Postal Card Machine with 1,000 Cards and Sign and Frame		25.00
1,000	Extra Postal Cards		3.00
1	Emblem Embossing Machine with 600 Emblems and Sign and Frame		100.00
500	Extra Emblems		5.50
1	Windmill Candy Machine without Candy		35.00
8	Hand-Painted, Framed Wall Signs	2.00	16.00
1	Combination Money Changer for Pennies		3.00
1	Automatic Pianova with 1 roll Music		300.00
2	Extra Music Rolls for Pianova (4 Pieces to the Roll)	2.50	5.00
1	Cashier's Desk with Glass Top and Sign		25.00
1	Repair Outfit		10.00
1	Key Board with Lock		5.00
48	Key Rings	.10 (doz)	.40
84	Key Tags, Cardboard, Metal Bound	.10 (doz)	.70
36	Coin Bags	.15	5.40
100	Perforated 1c Brass Slugs		.35
50	Weekly Statement Sheets (no charge)		
	Total		$4,015.10

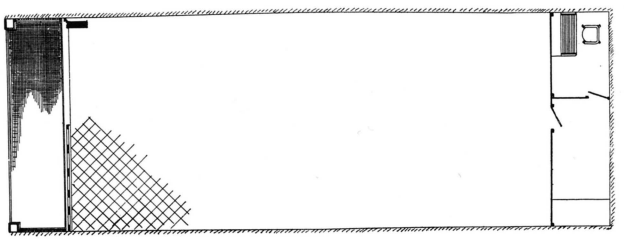
15



Front Elevation.



Elevation of Side Wall.



Floor Plan.

16

Arcade Outfit No. 6.

Size of room required about 25x80 feet, or 2,000 square feet. This size room allows space for additional machines being put in later, if desired.

Help Needed and Cost per Week.

1 Manager	$25.00
2 Lady Cashiers	14.00
1 Porter, to clean out	10.00
1 Repair Man	12.00
	$61.00

General Specifications.

Lay out the room with a 7-foot lobby in front and partition off 7 feet in the rear for office and repair room, per floor plan.

Carpentry Work—
Take out old front of building and replace with new one, per drawing, putting in wood box soffit across front, collapsible front doors with D. T. glass panels and four light D. T. glass transom, two center lights to swing. Put in partition in rear, extending from floor to ceiling, of ⅞-inch T. & G. ceiling, with two doors of same material. Also, cross partition extending 7 feet from the floor, per floor plan. Put in chair rail around the room, two signboards to extend from floor to ceiling, finished with molding at sides of lobby, sheet steel ceiling on lobby ceiling. Put in wood floor in lobby laid diagonally and pitched from front doors to sidewalk $410.00

Electric Work—
One steady burning electric sign, with words "Penny Arcade" spelled out in lights. Wiring for 60 machine connections. Wiring for 176 16 c. p. lights 296.00

Decorating—
Papering side walls and ceiling with good quality paper and burlap 4 feet 6 inches from floor on side walls. Picture molding around room. Painting 163.00

Total $869.00

Note—We will furnish blue prints and specifications giving complete details of these drawings, to parties buying Arcade outfits of us, upon request.

Equipment of Machines for Arcade Outfit No. 6.

25	Auto-Stereoscopes, 1907 Model, Front Wind or Cathedral Front, with Sign Frames	$ 37.50	$937.50
37	Sets of 15 Views each with Signs for Auto-Stereoscopes	2.50	92.50
8	Illustrated Song Machines with Signs and Frames, 1 Set of 12 Views and 1 8-inch Record each	100.00	800.00
8	Sets of 12 Views each with Signs and 8-inch Records for Illustrated Song Machines	3.85	30.80
5	Quartoscopes with Sign Frames	35.00	175.00
10	Sets of 4 dozen Views each, with Signs for Quartoscopes	6.50	65.00
5	Automatic Phonographs with Signs and Frames and 1 10-inch Record each	85.00	425.00
5	Extra 10-inch Records and Signs, assorted subjects	1.05	5.25
3	Illusion Machines in a Set, with Signs and Frames		125.00
1	New Owl Lifting Machine		35.00
1	**New Owl Dumbbell Lifting and Grip Machine**		100.00
1	New Owl Flashlight Lifting Machine		50.00
1	New Owl Searchlight Lifting Machine		70.00
1	New Owl Chimes Lifting Machine		75.00
1	Submarine Lung Tester		100.00
1	Rubberneck Lung Tester		100.00
1	High Ball Lung Tester		100.00
1	Flashlight Grip Machine with Stand		55.00
1	Hat Blower		75.00
1	Searchlight Grip and Lung Tester with Stand		70.00
1	Chimes Grip and Lung Tester with Stand		75.00
1	Bag Punching Machine		75.00
1	New Pneumatic Punching Machine		50.00
1	Large Horoscope Fortune Teller with 12 slots and 1,200 cards		150.00
2,000	Extra Cards for Horoscope Fortune Teller	1.75	3.50
1	Conjuror Fortune Teller with Sign and Frame		60.00
1	Pair Jumbo Success Fortune Tellers with Signs and Frames (1 for Ladies and 1 for Gentlemen)		35.00
1	Madame Neville Palmist, with 1,000 Letters		110.00
1,000	Extra Letters for Madame Neville Palmist		1.75
1	Cupid Postoffice with 1,000 Letters		100.00
1,000	Extra Letters for Cupid Postoffice		1.75
1	Weighing Machine		35.00
1	Large Electric Shock Machine		100.00
1	Doctor Vibrator with Sign and Frame		150.00
1	Lady Perfume Sprayer with Plate Glass Front and Sign and Frame and Perfume		100.00
1	Souvenir Postal Card Machine with 1,000 Cards and Sign and Frame		25.00
1,000	Extra Postal Cards		3.00
1	Emblem Embossing Machine, with 600 Emblems and Sign and Frame		100.00
500	Extra Emblems		5.50
1	Windmill Candy Machine, without Candy		35.00
8	Hand-painted, Framed Wall Signs	2.00	16.00
1	Combination Money Changer for Pennies		3.00
1	Automatic Pianova with 1 Roll of Music		300.00
2	Extra Music Rolls for Pianova (4 Pieces to the Roll)	2.50	5.00
1	Cashier's Desk with Glass Top and Sign		25.00
1	Repair Outfit		10.00
1	Key Board with Lock		5.00
48	Key Rings	.10 (doz)	.40
96	Key Tags, Cardboard, Metal Bound	.10 (doz)	.80
36	Coin Bags	.15	5.40
100	Perforated 1c Brass Slugs		.35
50	Weekly Statement Sheets (no charge)		
	Total		$5,072.50

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Arrangement of Machines.

It is important to arrange the machines in an Arcade in such a manner as to not only make the interior look well, but so as to attract custom as well. In our experience, it is best to place rows of machines along the walls, and if the room is wide enough, a double row, placed back to back, down the center of the room. Have the picture machines, phonographs and illustrated song machines in groups near the entrance. Place the larger machines along the walls and the small ones down the center. Athletic machines, such as the bag punchers, lifters, grip and lung testers, etc., belong in the rear. Weighing machines, some kinds of fortune tellers or emblem embossing machines should go near the entrance, if convenient. The cashier's desk should be a little in front of the center of the room, with an open space in front to permit people to reach it easily. Some machines should be placed out on the floor away from the walls, so as to break the room up. Allow plenty of space, however, for the crowd to circulate about in.

It is very essential to have good music, as it always attracts and holds a crowd. Place the music in front near the door, so that it can be heard from the outside.

A number of neat and tasty, framed, wall signs should be conspicuously displayed, reading "No Smoking," "Get Pennies of the Cashier," "Mention Our Entertainment to Your Friends," "Report Any Inattention to the Manager," etc. They not only help decorate the room, but are useful as notices as well. We have a large variety of very handsome signs of this kind.

Some easels at the sides in front upon which to advertise special features will help finish off the front and attract much attention. The bulletin boards on the sides of the lobby are also to display advertisements upon.

The interior may be beautified by the use of some of our Clevercraft pieces. These come in an endless variety of subjects, designs and sizes, such as leather and Indian patterns of all kinds, heads, framed emblems and pictures, all in bright colors and very decorative.

We issue a special catalogue of these goods which is sent upon request.

Management.

There are a number of details connected with managing an Arcade, which, if observed, will contribute very largely to its success and attractiveness.

The place and machines should be kept clean. Keep the glasses of Picture Machines clean, and see that the tubes of Phonographs are regularly wiped off with a clean cloth. The floor should be swept every day, and scrubbed as often as necessary, and the machines kept polished like new.

It is necessary to preserve the best of order, allowing no loafing, flirting or boisterous characters. Cater to the best trade. Women and children are the best customers, and an Arcade should be run in such a manner as to make it an appropriate place for them to visit and patronize.

A very important thing in fitting up an Arcade is to have display signs on the machines, calling attention in an attractive, catchy manner, to the particular features of each machine. We have employed a noted sign artist, to design and execute signs especially for Arcade purposes. We find that, in Arcades refurnished by us with signs, the receipts have increased largely, due to that reason alone.

Pictures in all machines which show them, should be changed at frequent intervals, at least every month, and the same applies as well to phonograph records, and the pictures, signs and records of the illustrated song machines, these latter, however, should be changed about twice a month. When the pictures are changed often, the same people will come again and again, as they will feel assured of seeing fresh subjects with each visit.

When any unusual public event, which attracts widespread notice occurs, such as a great murder trial or a disaster like the San Francisco earthquake, the manager of an Arcade should be quick to avail himself of the opportunity thus afforded for reproducing through picture, phonograph and illustrated song machines, these events, as they will attract big crowds. Such unusual matters should be featured by advance sign advertising on the easels and signboards in front of the Arcade.

The machines should be moved about occasionally, so that the Arcade presents a somewhat different appearance at times. If people see the same machine in the same place, time after time, they tire of it, and stop patronizing it. If moved to some other location in the Arcade, this ceases to be so.

It is a good plan to vary the appearance of the front of the Arcade by placing various novel and attractive machines out where they will be noticeable. They will not only make more money while out in front, but will serve to draw attention to the Arcade in general, as well. New machines, as purchased, may be used to excellent advantage in this way.

On busy days, such as Saturday nights, Sundays and Holidays, it is a good idea to have a floor boy to pass among the crowd and sell pennies. He should be given a certain number by the cashier and required to settle for them before receiving more.

The manager should watch the receipts of certain machines when placed in various locations in his Arcade, and when they begin to fall off, move the machines to another place and it will be seen that the receipts will at once revive. He should also keep a record of the number of pennies given the cashier for change. As a rule it is safe to assume that the machines will take in about 10 per cent more than the amount in pennies given out. This will enable one to estimate what the receipts should be, if collections are made by some one other than the manager. The pennies should be counted out by the cashier, by the use of a money changer, which will count

out five at a time with great rapidity. Have plenty of pennies constantly on hand.

All Mills Arcade Machines have a separate money box with lock and key. As soon as the arrangement of the machines has been determined upon, the keys to both money boxes and mechanisms should be placed on rings. Those to money boxes should be kept on the key board, locked up. The keys to mechanisms should be in the charge of the cashier, and when any are given out for any purpose, a tag upon which has been written the name of the party to whom given and the date, should be put in its place, so that all keys are accounted for and none get lost.

Care should be exercised to keep parties, who might desire to do so, from working the machines in an Arcade with slugs. Mills Machines are as nearly slug proof as possible, but may be worked with brass slugs. Keep a supply of our perforated brass slugs on hand and place them in the care of the cashier, with instructions to give them to no one except those authorized by the manager to use them. The cashier should keep a record of all slugs given out, to whom given, and the machine in which they were to be played. This will enable the manager to tell what machines are not working properly and require repairs, and will also show how many slugs are being brought in from the outside, as those coming from the outside will not be perforated. The number of perforated slugs given out by the cashier should check with the number taken from the machines. When machines fail, for any reason, to work properly, it is customary for the manager or floor man in an Arcade to use slugs in playing the machine to locate the trouble.

The manager or an assistant should circulate about the Arcade, watch customers and be always ready and willing to explain how machines are operated.

An Arcade should be open from 8 A. M. until 11 or 12 o'clock at night to get the best results and should be maintained in a first class manner at all hours.

System of Accounting.

It is most important for the manager of an Arcade to know weekly just how much his profits are. To enable those operating Mills Arcades to have this kind of information, we have devised a simple and yet comprehensive accounting system. This system converges in a weekly statement, which shows the number of machines of all kinds on hand in the Arcade, the number out of service for any reason, if any, and why, the total collections and average collections from each class of machines, thus enabling the manager to tell at a glance when the receipts of any class of machines is falling off, which might happen if pictures or signs were not changed often enough, and also to tell which kind of machines pay best in his particular location, and so know what to buy should he wish to increase his equipment.

This statement also shows the total receipts for each day and for the week, both for each kind of machine and all the machines in the Arcade.

Collections should be made from all machines daily, and as many cloth bags, about 8x12 inches, provided as there are kinds of machines in the Arcade. Tag each bag with the name of the machine it is to receive collections from. Have the keys to money boxes of the different kinds of machines' on different rings, tagged with the name of the machine. In the case of such machines as Phonographs, Picture Machines, etc. (of which there are more than one in the Arcade), have the keys for those machines on one ring and arranged in the same order as that in which the machines stand in the Arcade.

When starting to make collections, put the keys in the bags bearing the names of the various machines, and as the pennies are taken from the machines, simply empty them into the bags and tie them up, putting the keys back in the bags in which they belong. Empty all money taken from all machines of a kind in one bag.

When the collection is completed, take all the bags containing money to the office and empty and count the contents of each one separately, entering the amount each contains in the proper place on the weekly statement sheet, and returning the keys to the key board, which should be kept locked.

For many reasons it is always best to make collections at such times as there is no one in the Arcade. It is a bad idea to take the money from machines in public.

As various items of expense are paid, such as salaries, incidentals, etc., take receipts and hold them until the end of the week. Then enter all disbursements in the space provided for them on the weekly statement sheet. Pay all salaries, light bills and all other items of expense possible, weekly, as by so doing as much of the expense of running the Arcade as is possible, will be charged up against the same period of time as that covered by the income. Such fixed expense items, as rent, insurance, license, taxes, etc., as are paid monthly or yearly should be divided up and only that part covered by a week, charged in the weekly statement sheet as fixed expense for that week. For instance, if rent is paid monthly, charge up one-quarter of the monthly rent each week, and if insurance is paid annually, charge up one fifty-second, etc.

At the end of the week, foot up the weekly statement sheet, fill in the balance forms and the result will be just what the profit has been for the week.

Concessions.

In many Arcades excess space is rented to parties who install photograph taking outfits, palmistry booths, shooting galleries, glass blowing shows, etc. These parties either put in stands at their own expense, or the owner of the Arcade does so. A weekly rental, based upon the amount of space occupied and the probable receipts of the concession, is charged, or, in some cases, concessions are given on a percentage basis. Either will operate, although the rental basis is generally best.

Avoid such concessions as will make dirt or muss, such as lemonade stands and also those which would sell the same merchandise as that being vended by a machine in the Arcade, like candy, for instance. It is undesirable to have a concession compete with a machine.

Large Arcades invariably have a moving picture machine which projects popular, instructive, scenic and amusing moving pictures on a screen set a distance from the machine.

A space about fifteen to thirty by ten feet is necessary to install a Moving Picture Machine outfit and five to ten cents, depending on the character of the pictures to be shown, is usually charged as admission. Shows may be given as often as the crowd warrants. A show lasts from ten to fifteen minutes. The space in which the picture machine is located should be partitioned off from the remainder of the Arcade. One man to operate the machine is all the help necessary.

We supply Moving Picture Machines complete with curtains and are prepared to furnish a supply of films on a rental basis to those who cannot obtain such service at their home cities. Prices upon application.

When space permits, Scenic Railway Cars are operated and pay a big return on the investment. A space about forty to sixty by ten feet and twelve to fourteen feet high is necessary in which to set up one of these outfits and the equipment is about as follows:

A perfect imitation of the rear of a Pullman car is constructed in such a way as to be accessible from either side of the rear platform. The interior of the car is built to contain seats on both sides, with a seating capacity of about one person to each foot in length of the car. The end of the car opposite the entrance has a screen, upon which moving pictures, representing the scenery which might be seen through the car window were the car actually traveling, are projected by a moving picture machine. Arrangements are provided for imitating the noise of steam exhaust, air brake, whistle and bell. The car is also arranged to vibrate so as to afford the effect of a train in motion.

Five cents is usually charged as admission to the car and shows may be given as often as the crowd warrants. A show usually lasts from ten to fifteen minutes. Three attendants are necessary to operate one of these cars—a porter to stand on the rear platform and act as a barker, a man to run the moving picture machine and one to operate the various devices used to imitate the sounds of a train in motion. Regular moving picture machine films are used in a Scenic Railway Car, which may be procured on a rental basis in nearly any city. If a supply is not available at any point, we can arrange for this service for our customers.

We supply equipment for Scenic Railway Cars, complete, with the exception of the car proper and seats, it being customary for those putting in Scenic Railway Cars to build the car portion and supply the seating themselves. Prices upon application.

Games For Arcades.

Many Arcades have space not occupied by machines or concessions which could be utilized and made to pay a fine profit by installing various Arcade Games. There are a number of these games which we make and are in position to supply, as follows. They are usually made to fit a certain floor space, so that in quoting prices we have named approximate sizes, and will make the Games about the sizes given at the prices named.

An attendant or operator is required at each game, who may either be employed on a salary basis or be given a percentage of the receipts of the game he is running. We consider the latter course best, as, having a direct interest in stimulating the patronage of his game the operator will put forth greater effort to induce people to play.

The prizes used in connection with all these games embrace a wide variety of articles, some good and others cheap, such as card cases, mirrors, fountain pens, jewelry, knives, combs, chains, etc. We can supply a complete assortment of prize goods at all times. Of course, on all games a number of attractive prizes should be displayed, so as to attract attention, but the games can be so arranged as to make the possibility of winning such prizes not too frequent.

Japanese Roll Ball Game, including 4 Tables with 8 Balls each $500.00

Has a fence on three sides, about 12 feet long and 10 feet wide. The fence is painted and decorated with bamboo work made up in oriental design and has a flat top covered with carpet. The fourth side is made up by a large cupboard, used for display of prizes, etc. This game has a roof slanting down to each side, which is supported by four posts, the bottom standing about 8 feet from the floor. Decorated with numerous Japanese decorations and a large Jap parasol. There are spaces at the foot of each table bearing certain numbers. Eight balls are sold for 10 cents. The balls are rolled across the table by the player and the sum of the numbers on the spaces in which the balls rest indicates the prize won.

Japanese Fish Pond, including 100 Fish and 6 Fish Poles $400.00

This game has a fence on three sides and a cupboard on the fourth for display of prizes. Size about 10 by 8 feet. The fence has a flat top and stands about 3 feet high. The fishing tank is in the center of the enclosure on a highly ornamented stand, decorated with bamboo work. The tank is made of galvanized iron and has an overflow. At one end of the tank is a miniature millwheel, which is operated by a spring and is wound up. This agitates the water and keeps the fish in motion. The player pays five cents for the right to catch one fish. The fish have loops attached to them, through which the player must insert his hook, and are numbered on the bottom, where the numbers cannot be seen. The number on the fish caught indicates the prize won.

Chief Fox Spirit Writer, with Background, Tent, Drapery and Platform, including 1,000 Fortune-Telling Sheets, Developing Fluid and Ink $300.00

The base of this game is about 4 by 4 feet and 27 inches high and decorated after the Indian fashion. At the rear of the base is a large decorated background, hand painted with the design of an Indian wigwam. The height of the background above the base is about 6 feet and its width 4 feet. The Indian sits on the base smoking a pipe. The player pays five or ten cents, as the case may be, and is given a sheet of paper upon which he or she is to write his or her name. The operator then inserts this sheet in an opening in the breast of the Indian, holding it there for a few moments

while the fumes from the developing fluid inside the figure develops the fortune written on the sheet of paper. Of course, these fortune-telling sheets for both men and women have been previously prepared by writing the fortunes on the sheets in invisible ink.

Air Gun Shooting Target, with Stand, Counter, Tags, 3 Air Guns and 1 gross Darts (sometimes called the Dart Game).....$300.00

The front counter of this game is about 10 feet long by 4 feet high and is 2 feet wide on top, for rifles. The two side fences are about 8 feet long. The background has a pin board in center, to which tags bearing numbers are attached to represent a target. On each side of the target are hooks and shelves on which to display the prizes. In front of these and at the bottom of the display board is a slanting shelf on which the jewelry and other small prizes are displayed. The player receives from one to three shots for either five or ten cents, and the number on the tag or tags hit indicates the prize or prizes won.

The Electrical Game (Stein Game).....$500.00

Has one counter in front about 10 feet long and fence on two sides about 10 feet each, the fourth side being made up by a background, which, in the center, shows a street scene with various business houses, etc., containing windows. These windows are numbered from 1 to 100. On each side are shelves and hooks on which to display prizes and also in front of the background is a shelf for the same purpose. Steins of various sizes and kinds make attractive prizes for this game, and they are cheap and easily procured. In the center of the front counter is a switchboard; above this hangs a drop with six plugs, attached to electric cords. The switchboard is made up with two circles of sockets, and the machine is operated by a player placing one of the plugs in any of the sockets, which action lights up one of the windows in the background. A player is given one chance for either five or ten cents. The number of the window lighted designates the prize won; the windows and prizes having corresponding numbers. There is another switchboard under the top one, and when the operator wishes to throw a player off it is only necessary to move the lower switchboard slightly. This may be done without a player's knowledge. There is a gate in the left hand side fence. This game is finished in mission style with ornamental Dutch panels.

Dutch Windmill Candy Wheel, including 3 sets of 12 Paddles each and Chair.....$500.00

This Holland Candy Wheel is composed of a counter about 10 feet long, 4 feet wide and 4 feet high. The front and ends of this counter are gotten up in decorated Clevercraft work to represent old Dutch scenes. The top is covered with green cloth. On the counter the old mill with paddle-wheel attached, stands. The wheel is divided up into 36 numbers. We supply with this game three separate sets of paddles, twelve to the set, each paddle containing three numbers. Each set of paddles is of a different color. This enables the operator to operate the whole of the three sets of paddles for one turn. The background has a hand painted scene in center and shelves for displaying candy on each side with ornamental Dutch figures on top. We also furnish a chair for the operator of the wheel and a post with "Winner" sign on, to indicate the number at which the wheel stops. The paddles are sold to players at five cents each, and the party holding the paddle having the number on it against which the wheel stops wins a one pound box of candy. This makes the candy sell for 60 cts. per lb., candy costing 19 to 21 cts. per lb. is usually used.

Automatic Rifle Range Game, including 3 Rifles and 3,000 Bullets.....$300.00

This game is made up in different styles, the most popular being the one with automatic figures. The background is about 5 feet wide, 7 feet high and 3 feet in depth. Automatic figures in the center are made of steel, as is also the background. The target is in the center of this background. The machine runs by an electric motor. When a player strikes the target an electric connection is made in back of the machine which sets the automatic figures in motion. There is also a wheel with numbers from 1 to 42. This wheel is also set in motion when the target is hit. We also furnish a front counter about 8 feet long, with top 3 feet deep, for rifles to rest on, and a fence on the other two sides about 10 feet long. The player receives from one to three shots for either five or ten cents, and the number or numbers on the wheel the player hits indicates the prize or prizes won.

Roly Poly Game, including 25 Balls.....$250.00

Has a fence on three sides about 10 feet long and 8 feet deep. In the center is a slanting table and a background about 8 feet high makes up the fourth side of the game. In the center of the background is a negro's head with mouth wide open, making a large opening through which the balls are thrown by the player and from there they roll down on the table through the open door. In this table are a number of pockets with different numbers. The player gets three balls for five cents or seven for ten cents, and the sum of the numbers on the pockets made designates the prize won. Under the pin board is a false table, which, by pulling a lever, returns the balls to the operator. In the background, on each side of the negro's head, are shelves covered with iron gates, for displaying prizes.

Katzenjammer Schoolhouse, including 25 Balls...$500.00

Has a fence on front and two sides, about 12 feet long and 10 feet deep. It has also a trough on front fence for holding balls. The fourth side is made up by a small house about 10 feet wide and 8 feet deep, built to represent the inside of an old schoolhouse with 30 school children and a teacher at the desk. The player throws balls at these figures and knocks off their heads. These heads are brought back to proper place by pulling a lever. There is also a trough at the base in which the balls return to the operator. The player receives either three balls for five cents or seven for ten, and the number of heads knocked off designates the prize won.

Rough House, including 25 Wooden Balls.....$500.00

Has a fence on three sides about 10 feet deep and 12 feet front, the other side being made up by the front of a house about 12 feet wide and 10 feet high. The house has a number of windows about 4 inches square, and two doors which are so arranged that glass can be slid in the spaces at the back. Small wooden balls, which barely go through these openings, are to be thrown at the windows. The number of glasses broken designate the prize won. There is also a front porch with balcony and a set of figures representing a family. The heads of these figures are arranged so that they may be knocked off when struck by a ball. The balls are returned to place by the operator pulling a lever. The balls are sold, three for five cents or seven for ten cents. There is a trough on the side for the return of the balls to the operator.

Showing How to Group Machines in an Arcade in an Attractive Way.

FORTUNE TELLER SECTION.

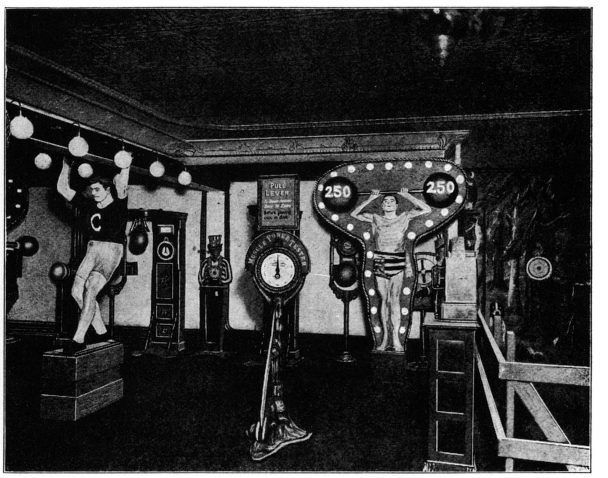
The walls can be handsomely decorated with Mills Clevercraft goods



Showing a neat way to place Fortune Telling, Love Letter, Postal Card and similar machines.

ATHLETIC SECTION.

Machines of this class are placed in the rear of an Arcade



A Section of One of Our Prosperous Arcades showing

Bag Punchers, Lifters, Grip and Lung Testers, and most large machines.

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Showing Arrangement of Different Sections of an Arcade.

MUSIC SECTION.

These machines should be placed in rows along the sides of an Arcade



Showing the arrangement of Phonographs, Illustrated Song and Picture Machines in one of our large and successful Arcades.

CASHIER'S DESK AND SURROUNDINGS.

The cashier's desk should be a little in front of the center of the room



The Pennies may be piled up, five in a stack, on Cashier's desk, to make a showing.

Music Always Attracts and Holds a Crowd

26

A Few Fine Arcades.

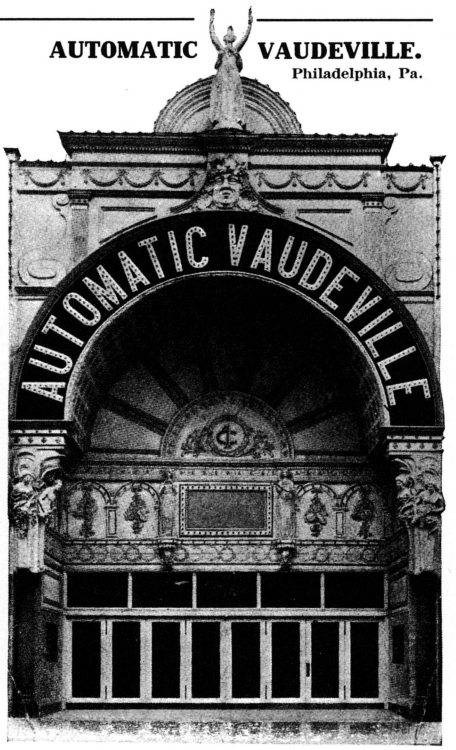
MILLS EDISONIA.

At the St. Louis World's Fair



AUTOMATIC VAUDEVILLE.

Philadelphia, Pa.



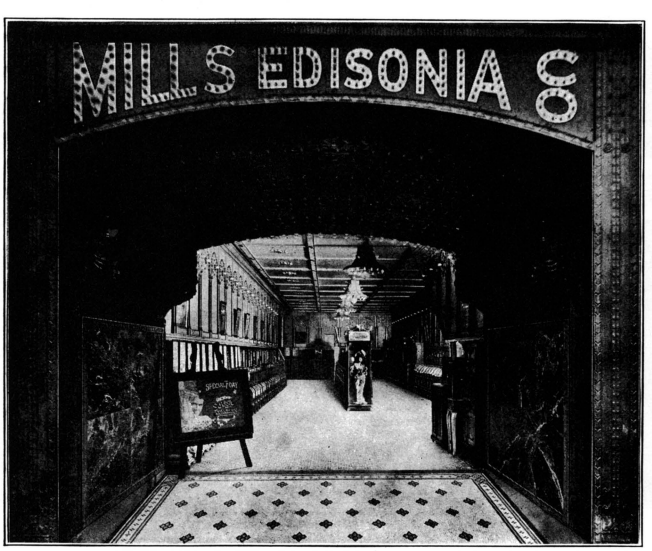
There is no speculation about a Penny Arcade. That's because there is an ever-present and ever-increasing public demand for just what the Penny Arcade provides. And because of this public demand the Penny Arcade has passed through the experimental stage and has become a permanent institution, just as the theater, the opera and the circus are permanent institutions.

27

A Few Fine Arcades

MILLS EDISONIA CHICAGO.

One of our Arcades, located at 278 State Street, Chicago

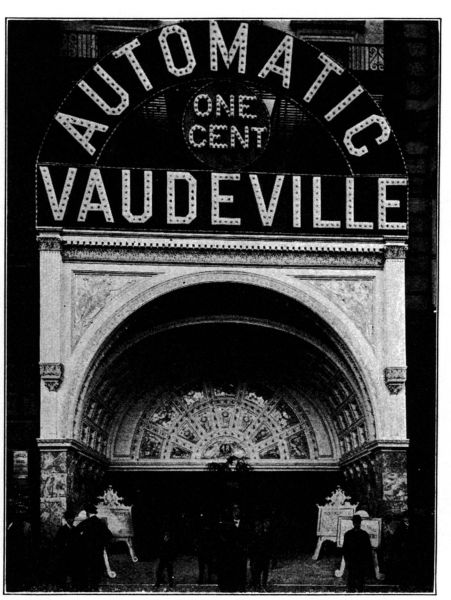


Small Investment, Big Profit

Running an Arcade beats working for someone else, because with an investment of a few thousand dollars you can make more money with less work and worry.

AUTOMATIC VAUDEVILLE.

14th Street, New York City



This Arcade has taken in a thousand dollars in one day.

28

A Few Fine Arcades.

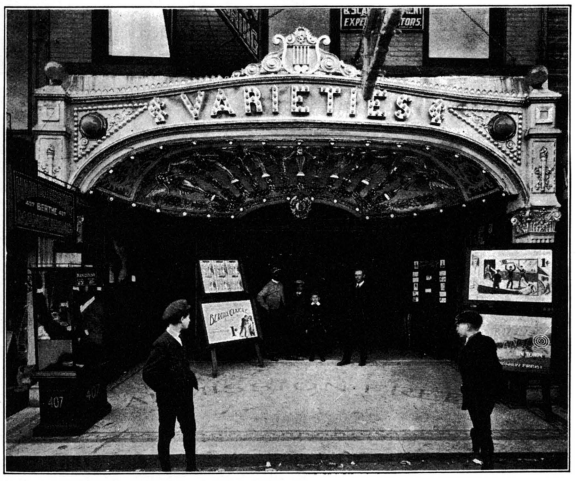
AUTOMAT, KANSAS CITY.

The Penny Arcade has Become a Permanent Institution



VARIETIES, NEW YORK CITY.

The Penny Arcade is Strictly a Cash Business



Mills Machines Make Money Fast

in any part of the world—in a small town or in a large city.

They never fail.

TESTIMONIALS.

Indianapolis, Ind., October 4, 1906.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

Since opening our Arcade Parlor here we have met with excellent success, in fact, our receipts have been fully 25 per cent more than our expectations. We attribute this in no small measure to the Mills Machines, and in selecting your machines our judgment has been justified. For durability and general attractiveness we consider that they are unequaled.

Yours very truly,
NATIONAL AMUSEMENT CO.,
C. J. Allardt, Mgr.

Caribou, Me., January 10, 1906.

Mills Novelty Co.,
Chicago, Ill.

Dear Sir:

We received the Bag Punching Machine Saturday noon, January 6, 1906. That afternoon and evening it took in $7.75 in our Penny Parlor. It is doing well up to date. We are much pleased with the machine, like it as well or better than any machine we ever owned, and we have been in the business about ten years.

(Signed) GEO. E. CLARK.

Huntington, W. Va., November 20, 1906.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

In reference to our Arcade in Huntington, beg to advise that it has been very successful since we opened on the 6th of October. Our receipts have been a little over $800.

Yours very truly,
BLAIR P. WILSON.

Mobile, Ala., August 7, 1906.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

Arcade very good; only one mistake—I did not buy all Mills Machines. I have a lot of junk, no good, yet it is new.

Yours very truly,
L. F. ELDRIDGE.

Chattanooga, Tenn., February 12, 1907.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

Our business is capacity.

Very respectfully yours,
AUTOMATIC VAUDEVILLE,
By Walter W. Fox.

Greenville, Pa., June 19, 1906.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

Enclosed please find check, for which please send me 5,000 (five thousand) postal cards for machine which I purchased from you. I enclose check for $11.25. Please send me assorted cards. Send at once by express, as I am nearly out of cards. The machine has been running three days and the thousand cards are nearly out.

Yours respectfully,
W. S. GREENE.

Hannibal, Mo., October 9, 1906.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

The Punching Bag Machine purchased of you for my Star Theater Arcade paid for itself in the first two weeks. I consider your machines unequaled as money getters and the most perfect in construction of any I have seen.

Yours very truly,
J. B. PRICE,
Mgr. Star Theater.

Huntsville, Ala., Feb. 16, 1907.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

Our machines are coming up to our full expectation ever since our opening. We have a very handsome place for a town of this size and business all around is good.

Yours very truly,
J. D. HUMPHREY & SON.

Fargo, N. Dak., July 28, 1906.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

Our business in the Arcade is prospering and we have the assurance that our landlord will increase our space and put in a new front as soon as the work can be done. After this is completed I shall buy some more machines, but at the present time I have the room full.

Yours very truly,
J. F. TREAT.

Altoona, Pa., June 21, 1905.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

The Illustrated Song Machine has been doing very well, averaging about $10.00 weekly. We think so well of it that we have given your Mr. Steinberg an order for four more, which we will install in our new arcade.

Yours very truly,
SILVERMAN BROS.

Winnipeg, Manitoba, Canada, Sept. 29, 1906.

Mills Novelty Co.,
Chicago, Ill.

Gentlemen:

I want you to know that all the machines I have of your make are working fine, and in as good shape as when I got them, three years ago.

You can use this letter any time and I will make affidavit to same any time you wish.

Yours very truly,
E. McKEOWN.

Worcester, Mass., June 5, 1906.

Mills Novelty Co.,
Chicago, Ill.
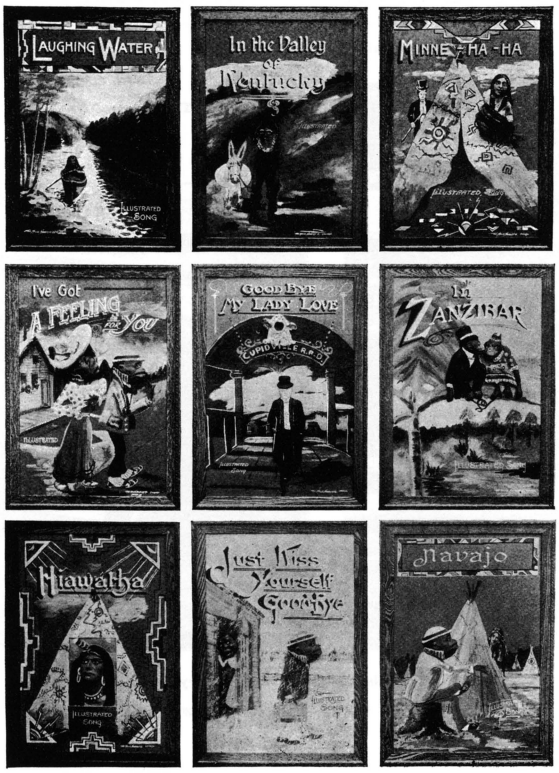
Gentlemen:

You asked me to drop you a line relative to the Arcade. I am very much pleased thus far with business and if it keeps up I will have no kick coming. The Bag Punching Machines are having all they can stand. Are in use all the time, and if they last the season through they are wonders.

Yours truly,
WILLIAM F. COE,
Care of White City.

A Few Samples of Signs Appropriate to Use on Machines in Arcades.

New Songs Illustrated as They Come Out.



The More Attractive the Sign the Stronger the Drawing Power of the Machine.

30

Mills Automatic Virtuosa.

The most marvelously perfect coin operated musical instrument ever produced



A Violin with automatic fingers to manipulate the strings, revolving discs to represent the bow, controlled by an ingenious arrangement of electro-magnets, and a small motor, all in motion and performing each their function at the proper moment and producing music that would be a credit to an accomplished musician,—a violin turned into a thing of life,—an automaton working with the precision of human hands controlled by brain, muscle and nerve.

A musical instrument automatically and electrically controlled throughout, playing solos, popular airs, imitating the organ, mandolin or orchestra, and producing all the musical effects peculiar to violin playing. Write for special catalogue.

Mobile, Ala., March 22, 1907.

Mills Novelty Co.,
Jackson Boulevard and Green St., Chicago, Ill.

Gentlemen:

We have in our Tappe Room one of your automatic violins. It is a great novelty and has been much admired by our patrons. We are very well satisfied with the amount that this machine has netted us and you may refer to us at any time.

We also wish to say that all the coin-operated machines we have purchased from you have been **perfectly satisfactory.**

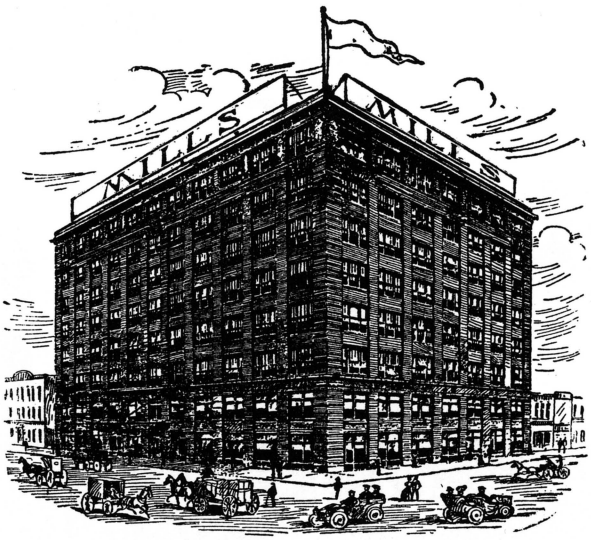
Very truly yours,
HERVEY HOTEL COMPANY,
Chas. B. Hervey, V. P. and Mgr.

Made Only by

Mills Novelty Co.

Chicago

32



Main Office and Factory

Mills Novelty Co.

Mills Building
Jackson Blvd. and Green Street
CHICAGO, ILLINOIS, U. S. A.

Capital $500,000

Next page, clockwise from top left: The restoration and preservation of vintage arcade machines requires experience and knowledgeable attention. And good Humor. Restorer Steve Gronowski points to his hourly rates for this work: Repair work $35, If you watch $55, If you help $75, If you worked on it before $150. Photo by Dick Bueschel.

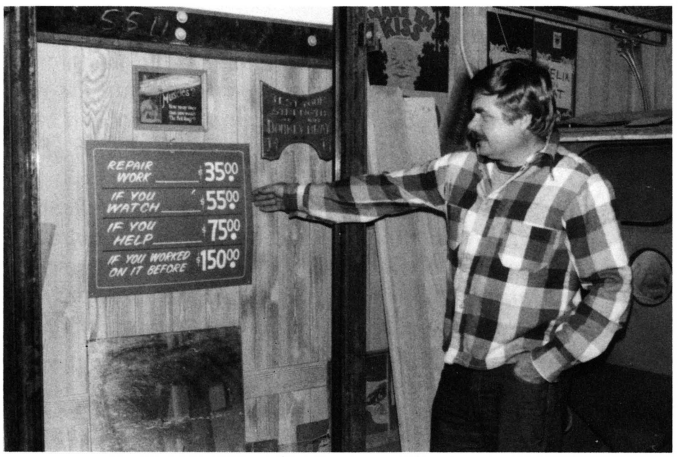
The booklet "Mills Penny Arcades" advocates summer machine placement in parks and fairs, with machines moved to city locations in the fall for year round income. This typical temporary location is a street fair in Cameron, Missouri in the summer of 1900. Dick Bueschel Collection.

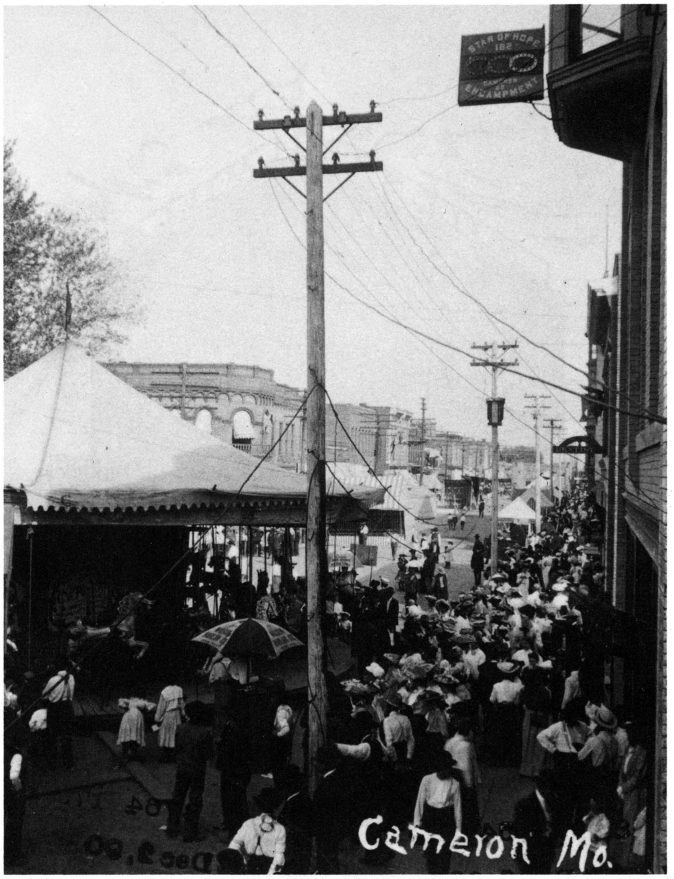
Herbert S. Mills, June 1897 founder and subsequent President of the Mills Novelty Company, Chicago. Mills Novelty made their first arcade machine in 1899, and by 1905 was the dominant producer in the field. H.S. Mills was the author of the landmark "Mills Penny Arcades" booklet. Dick Bueschel Collection.

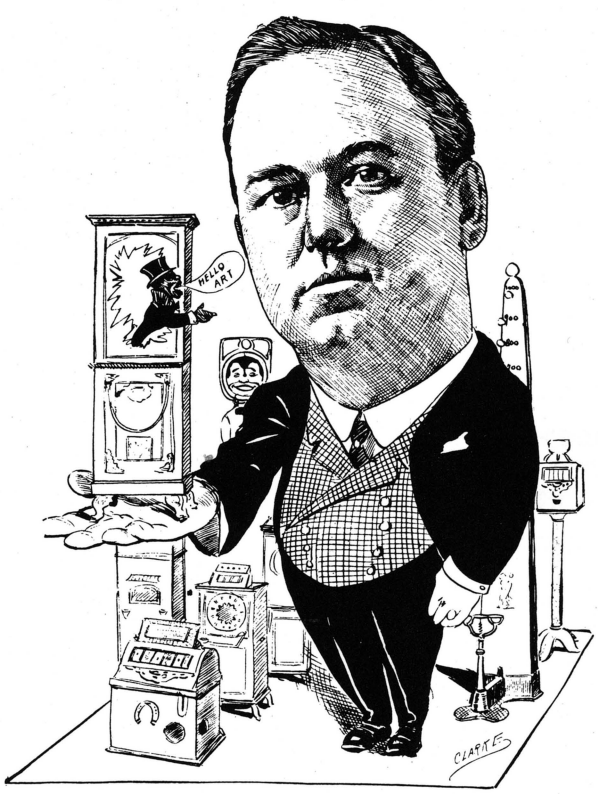
A. Arthur Caille, President and Treasurer, and the promotional minded brother of The Caille Brothers Company, Detroit, largely surrounded by arcade machines in a newspaper cartoon circa 1905. Under Art Caille's encouragement Caille Bros. Co. became the major arcade machine competitor to the Mills Novelty Company of Chicago, an intensity that lessened once Art Caille turned his primary interest to motion pictures, opening Detroit's first movie theater in 1905. Dick Bueschel Collection.

To Make Money
To Make It Quickly, Safely, Surely
That's the Point

Form 1443. 6-10-07.—5M. K. P.







ALL ON THE SQUARE



ACKNOWLEDGEMENTS

This series of volumes about the history and collectivity of vintage coin-operated arcade machines was 12 years in the making prior to this first volume. It called for a constant research effort on the part of the authors and contributing arcade machine collectors, restorers and fellow historians. The fact that so much of the lost history of these machines could be recreated so long after the fact can be attributed to three major circumstances. The first is the survival of so many of the machines, retained by private collectors who liked them. The second is that many of the machines had unique and patentable features, enabling the authors to identify many machines and their makers in the patent records. Finally, the uniquely American attributes of media advertising, direct mail flyers and catalogue promotion to sell as broad a market as possible virtually got started and remained in full force throughout the tenure of the active life of the machines. The story of the intensive search for this hard data would make a book in itself as a number of significant discoveries were made in most unlikely places. The photographic, written, published and verbal record of over a century of arcade machine history somehow survived the years. All that needed to be done was to find it. These volumes demonstrate the success of this search and credits those who contributed.

Basic machine identification, dating and production histories came out of the media and the rather complete coverage given to public amusements and the coin machine industries and their people over the years by a combination of horizontal scientific and vertical trade publications. Complete runs of these publications were studied page-by-page for machine introductions and major shifts in location placements as well as for the minutiae that makes for lively historical reading.

The early history of the machines from the middle to late 19th and into the early 20th century were tracked by patents, in the pages of the country's leading invention, scientific, amusement, entertainment and saloon and anti-prohibition publications; in the early promotional literature, advertising and trade catalogue "paper" collections of authors Steve Gronowski and Dick Bueschel, machine collectors Bob Legan, Tim LaGanke, Joe Vojacek, Ken Rubin, James D. Vasey; and were backed up by the research notes and insightful leads to new material provided by the eminent U.K. coin machine historians Nic Costa, of London, and Jon Gresham, arcade machine collector and proprietor of The Penny Arcadia public museum at Pocklington, York, in England. Significant help was also contributed by Dick Bueschel's coin machine mentor, good friend and America's own preeminent folk art, pop culture and coin-op historian Fred Fried of New York City and Vermont.

The media consulted included *American Artisan*, 1889-1890; *Scientific American*, 1885-1905, *Mixed Drinks*, 1889-1894, *Fair Play*, 1894-1897 and *Champion of Fair Play*, 1898-1920, the latter three all the same publication with name changes over the years, in hard copies in Dick Bueschel's collection, as well as in reproduced copies (or microfilm) found in The Library of Congress, The Chicago Public Library, and The State Historical Society of Wisconsin; *The National Police Gazette*, September 7, 1867 through December 29, 1906 in The Library of Congress, obtained through Xerox University Microfilms, Ann Arbor, MI, and in Dick Bueschel's collection; *The New York Clipper*, 1898-1908 in Bueschel's collection; *The New York Times*, 1885-1905, in microfilm in the Chicago Public Library; *The Billboard,* 1894-1976, in The Library of Congress, The Chicago Public Library and through Xerox University Microfilms, all on microfilm, and in hard copies in the collections of Dick Bueschel and Steve Gronowski; and in *Automatic Age*, 1925-1946, *The Coin Machine Journal*, 1931-1962 and *Automatic World*, 1930-1957, all in hard copies in Dick Bueschel's collection.

Beyond the sourcing of documentary and verbal data throughout these volumes special acknowledgement should be given to those who encouraged the authors and provided reach into world of coin machine collectors to track down the surviving machines for knowledge and photography. These included Cindy Kersteins, editor of *The Coin Slot*; Don Hoflin, publisher of Coin Slot Books, and president of Hoflin Publishing, Ltd.; and Ted Salveson, publisher of the monthly *Salveson's Coin Machine Trader*. Thanks also to Frank Zygmunt of Westmont, IL, for seeing to it that we saw his remarkable and very

early Auto-Machine peep show, lovingly restored by Robert Ferguson of Mt. Prospect, IL, and for making copies of the glass slides available for use in this book. Special appreciation is also to be given to the heirs of Terry Ramsaye to quote and reproduce a number of original pictures from the 1926 edition of *A Million And One Nights*, a history of the motion picture (Simon And Schuster, Inc., New York).

It was with the data professionals — the outsiders that have no particular interest in coin-operated machines but maintain a dedicated interest in knowledge and historical truths — that much of the hitherto unknown backgrounding and specific maker data originated. Their overall contribution cannot even be measured and this volume could not have been produced without their continued support and help. Specific acknowledgements for aid in Volume 1 go to the recently retired Carl H. Scheele, Curator, Division of Community Life, National Museum of American History, Smithsonian Institution, for his great enthusiasm for this project, and his avid and successful tracking of any and all references and surviving coin machine artifacts in the Smithsonian holdings; Mrs. A. Heap, Local History Librarian, Leeds, Department of Leisure Services, Leeds City Council Central Library, Leeds, England, United Kingdom, for her researches into the early history of the Exhibition Machines made by John Dennison and for copies of the catalogue of The Yorkshire Exhibition of May 1875 listing and describing the Dennison machines; the County Librarian, Middlesborough, Cleveland, England, for directory and rate book data on Anthony Harris; Mrs. Mildred T. Giusti, Reader's Advisory Department, Providence Public Library, Providence, RI, for directory data and research into William T. Smith, the first American coin-op exhibition machine maker; the library staff of Lake County Museum, Wauconda, IL, for permission to author Dick Bueschel to pore over three bulging boxes of Edward H. Amet materials, obtain copies of unpublished research papers and speeches, and reproduce a number of original photographs of Edward Amet and his ventures; Gerald W. Rice, New Hampshire Room, City Library, Manchester, NH, for information about Edwin R. Whitney and his relationship to the Fairbanks brothers; Gerald J. Parsons, Head, Local History and Genealogy Department, Onondaga Public Library, Syracuse, NY, for data on John Lighton and Herman Casler and their manufacturing companies; Collin B. Hamer, Jr., Head, Louisiana Division, New Orleans Public Library, New Orleans, LA, for data on early New Orleans coin machines from newspaper files; the Collection staff at the Research Library/Photo Services, Edison National Historic Site, U.S. Department of Interior, National Park Service, West Orange, NJ, for KINETOSCOPE and KINETOPHONE data and permission to reproduce original photographs and artwork from the Historic Photograph Collection; the research staff at the Margaret Herrick Library, Academy of Motion Picture Arts And Sciences, Beverly Hills, CA, for data on the early history of the motion picture and Edison's KINETOSCOPE as well as permission to photograph the surviving coin-operated KINETOSCOPE machine on the library premises; Ray Phillips, of North Hollywood, CA, for his indefatigable efforts to train author Dick Bueschel in the significance of the Edison KINETOSCOPE and bring him up to speed on the various models and sources for additional information, as well as provide a copy of the original The Kinetoscope Company "Directions for Setting Up and Operating the Edison Kinetoscope," circa 1894; Jon Gresham of Pocklington, New York, England, the founder of Penny Arcadia, a living museum and exhibition, for extending the hand of friendship to both authors, concentrating on bringing Dick Bueschel up to speed on the developmental history of the MUTOSCOPE, with emphasis on the fact that the machine was developed by a Brit; John V. Cinciarelli, New Jersey Room Librarian, Jersey City Public Library, Jersey City, NJ, for his diggings into the records of numerous Jersey City machine makers in the 1890-1910 period; Joan L. Sorger, Head of Main Library, Cleveland Public Library, for making the connection between the work by Franklin W. Kreiner and the Pnuematic Strength Test Company, 1890-1893; Judith Mosiniak, Library Assistant, Special Collections, The Minneapolis Public Library and Information Center, Minneapolis, MN, for finding data on the McCollum And Beckwith firm, 1893-1898; Loretta Griks, Reference Librarian, Southington Public Library, Southington, CT for background data on the elusive New England Mfg. Co. 1896-1900; Jane B. Wickam, Assistant Reference Librarian, Tiffin-Seneca Public Library, Tiffin, OH for data on Clyde C. Blair, 1903, Leland Hilligross, History and Genealogy Dept., St. Louis Public Library for notes about John Ringen of the Ringen Store Company, 1890-1895, and William H. Ashwell's American Excelsior Automatic Supply Company, 1890; Paul Woehrmann, Local History and Marine Collection, Milwaukee Public Library, Milwaukee, WI, for data on Charles H. Bierman and his Automatic Machine Company, 1904-1914; Mrs. Alex Early, a volunteer in the Genealogy And Local History Department, Fort Worth Public Library, Fort Worth, TX, for data on James P. Taylor, 1882-1905; Stereo View researcher Jeff Little of Parkersburg, West Virginia, for data about the American Panograph Company; the inventive and diligent researches in the 1880, 1890 and 1910 census records by F. Brien Doran of Dublin CA, that has done much to fill out the record of long forgotten arcade machine inventors and marketers; and the Corporation Division staffs in the Secretary of State Offices in New Hampshire, Maine, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, District of Columbia, Maryland, West Virginia, Pennsylvania, Ohio, Indiana, Michigan, Illinois, Wisconsin, Missouri, Minnesota, Iowa, Kentucky, Tennessee, Louisiana,Texas, Kansas, Montana, and California who tracked down the incorporation records of the ancient to modern arcade machine producers.

Final thanks go to Jennifer (Muffin) Gronowski, Barrington Hills, IL, Sharon Jusick and Dale Wilson of Flossmoor, IL for the word processing preparation and frequent revision of this Volume 1 manuscript and Megan Bueschel for the document conversion inspiration; Dick's wife Helen and Steve's wife Mary for putting up with this mess of paper for so long, and the many arcade machine collectors, dealers, restorers, historians and machine enthusiasts whose material help is contained and often credited in the pages of this volume.

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414 N. Prospect Manor
Mount Prospect, IL 60056
1-708/253-0791

Steve Gronowski
R. R. 2, Bateman Circle
Barrington Hills, IL,60010
1-708/381-1234

September 5, 1991

About the Authors

Co-authors Steve Gronowski (left) and Dick Bueschel (right) demonstrate their hands-on approach to the study of Arcade Machines. Steve gave up his trade as an electrical contractor after working on the Sears Tower, the world's tallest building — to concentrate of the restoration, sale and manufacturing of replicated Arcade Machines of the 1910-1930 period under the maker's name of Mechanical Antiques And Amusement Company. Dick is well known as the author of a series of books covering all forms of vintage coin machines, has two married daughters and lives with his wife Helen in Mt. Prospect, Illinois. Dick received a BA degree in American History at Illinois College, Jacksonville, Illinois in 1951. Just recently retired from the business of industrial marketing, Dick is a full time writer and collateral and promotional free lancer, often working on coin machine, antique and oriental rug marketing projects. Both authors grew up in Chicago, Dick in the thirties and early forties boom years of coin machines and Steve in the fifties and sixties years of major changes in these industries. Both bring a unique affection and understanding to this story of the most entertaining of all coin machines.



100 MACHINES

William T. Smith Manufacturing Company

THE LOCOMOTIVE Floor Exhibition Machine

1885-1889



Gil Shapiro, Urban Archeology.

The Granddaddy of all American arcade machines, William T. Smith's THE LOCOMOTIVE of 1885 was the first amusement coin machine to be built in the United States in quantity, and the first to find widespread location placement. The only realistic way to approach a description of the popularity of this device during its period of usage is to relate it to more modern phenomenon. When it was built, railroads were the most advanced technology of the age — akin to today's space program — and railroad engineers were held in as much awe as astronauts.

While in later years, such model making was a useful technical tool used to measure space requirements and solve mechanical problems, in the 1880s such models were made for their own sake as representations of something larger. And the kids — even the adults — loved them. The fact that a locomotive could be reproduced with all its moving parts was a marvelous feat for its day. A viewer could see what was connected to what and actually learn something from this coin-operated display. That was part of its popularity. The other part was the fun of it, and the fact that this most public of machines was where ordinary people could see it, and make it perform its magic for the mere dropping of a nickel (spelled "nickle" at the time). That was big money in 1885, up until the panic and Depression of 1893 when a lot of these machines were converted to two-penny play, gaining a new lease on life.

Author Dick Bueschel remembers one on location in an arcade that rambled all over the far end of Navy Pier, jutting out into Lake Michigan from the shoreline of Chicago, in the early 1930s, probably moved there from an old city railroad station. Two examples that survived original placement at Coney Island in the 1880s were picked up by an eastern collector years ago, when the park was disbanded (they were still there), with at least one put up for auction at Sothebys (where the picture on this page was taken).

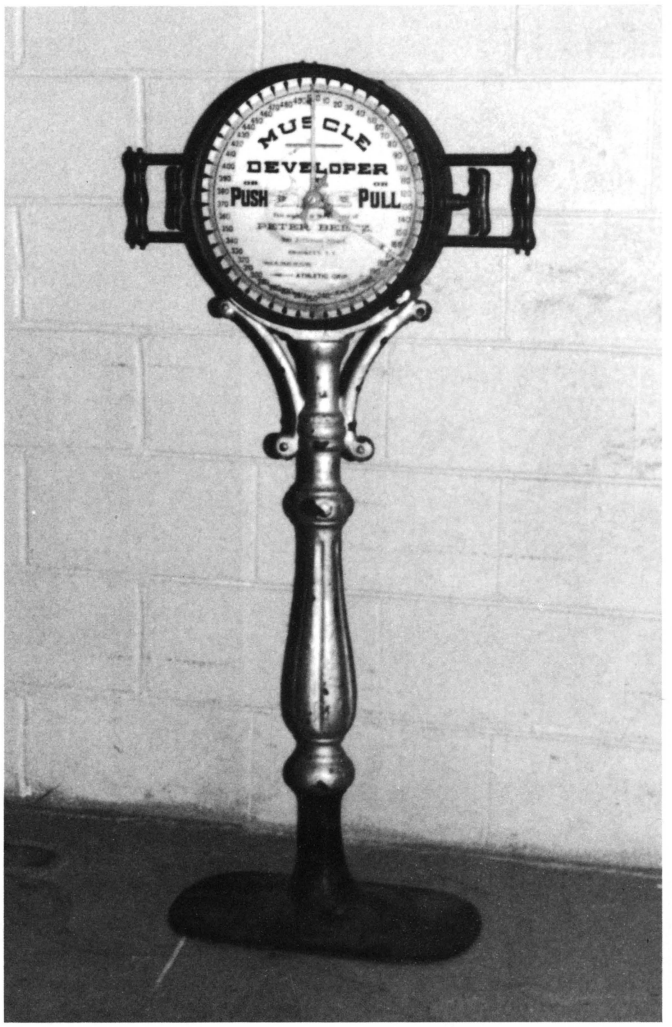
There must have been hundreds of these machines when they first came out, but only 2 or 3 seem to have survived the years, although it is hard to imagine any of them being junked. Perhaps some of the models survive in museums or private collections, and this publication of their origins might bring them out. Quite a variety of them were made, with this 4-4-0 example being the smallest. The other Coney Island example is larger, and the one that was at Chicago's Navy Pier was a 4-6-2 plus double trucked tender, making the boxed machine considerable longer and smaller in scale.

The big contribution of Smith's THE LOCOMOTIVE was electricity. It is nothing short of remarkable to see that this new power source, all but unknown a decade earlier (and making its entry on the world stage only 9 years before with the introduction of Edison's incandescent light at the American Centennial Exposition at Philadelphia in 1876) was put to work in a coin machine so early. Two dropped pennies trip the mechanism, the wet cell battery in the cabinet feeds the electric motor, and this whole thing comes alive...for 40 seconds.

Peter Beetz
MUSCLE DEVELOPER Pedestal Athletic Machine
1888-1904

One of the earliest of America's coin machine geniuses, Peter Beetz of Brooklyn got his start by making a modified version of Ferdinand Mosser's HAND POWER TEST as produced by fellow Brooklyn manufacturer Joseph DeVantery. The first Beetz version of April 1888 was called the STRENGTH TEST, with two handles instead of the single grip of the earlier machines. Refining this approach, Beetz produced this "Push Pull" model in December 1888 as the MUSCLE DEVELOPER.

This is very much a saloon machine, more often than not the center of local betting to see who was the stronger, or who would buy the next round of drinks. For that reason, and for the fact that as a coin-op it could literally run itself, these devices were placed in the far corners of a saloon out of the main stream as they could generate their own crowds. Because of the constant strain and stresses of their players — hardly any coin machine ever made was brought under greater physical abuse — they were very sturdy and heavy. Everything except the dial and glass is made of heavy cast iron or bronze, and it's a tough two-man lift to move one of these things. Bartop models were also made, but the missing iron pedestal (meaning an over anxious pull or push might knock the machine over and crack somebody's fingers) and the fact that the machine took up valuable bar space made the floor model preferable. Unlike the later cast iron 5-reel poker machines on similar pedestals, where the stand itself became a cavernous cash box, all of the money keeping features of the MUSCLE DEVELOPER and its other model variants were in the clocklike cabinet itself, so the machine could be used on or off the pedestal. The bartop models had their own filigree base that compensated for the curved bottom and added weight for stability. They tend to be a lot rarer in surviving models, although none of these machines are seen in large numbers. Most arcade machine collectors have never seen one, or don't know what they are. But for sheer ambience, any old saloon simulation could well use a Beetz athletic grip machine in a dark corner. It makes a late 19th Century bar look real (making one wonder why they weren't used in movies or TV shows years ago as a barroom scene and storyline adjunct, providing a competitive sequence equal or superior to the Wild West poker game or saloon shootout in which the hero and villain can both grunt, groan and grimace while their put their strength to the test. It's a new idea!) and brings back something true to the past.



Allan Pall Collection.

The Beetz improvements were patentable, and he applied for one on April 4, 1888. It stated: "The object of the invention is, in part, to provide the machine with two connected gripping devices or 'grips,' in part to provide a coin-chute that may be conveniently freed from obstruction, and in part to provide means for controlling the pointer that is auxiliary to the ordinary pointer or dial-hand." But the primary contribution made by Beetz was making the coin part of the working mechanism itself "...therein the inserted coin, interposed edgewise between moving parts, serves to unlock the device." The patent was issued on December 18, 1888 as Patent No. 394,812, "Grip Tester or Similar Coin Controlled Device." If you've got the machine, a framed copy of the patent on the closest wall makes a nice companion display. As for Beetz, he survived as a New York coin machine maker until the World War 1 years.

National Automatic Machine Company

LIFT, GRIP AND FINGER TEST Floor Athletic Machine

1891-1894



Bob McGrath, Jr. Collection.

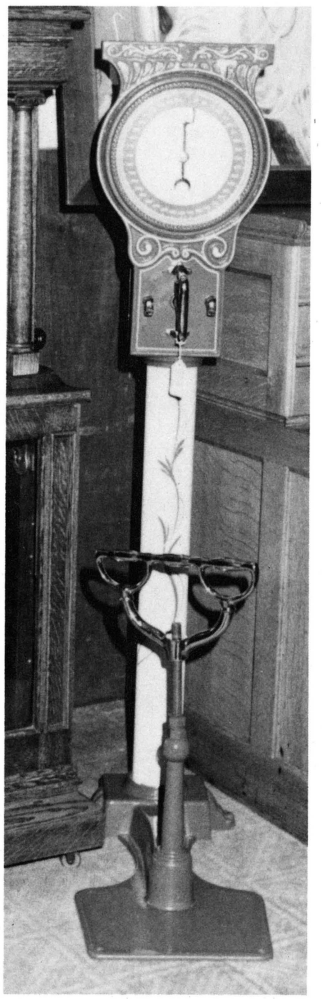


Photo by Bill Whelan.

Nothing moves as fast as an idea whose time has come. In the first ten years of coin machines practically every form the device would take was developed in a flurry of importation and invention. Many of these basic machines remained relatively unchanged for another half century, or even more, just changing their source of manufacturing and, with that, their company and model names. Because of this profusion of makers and machines it is often difficult to trace a specific type of device back to its beginnings, much less identify the maker. Sometimes, when it is accomplished, the results can be both surprising and enlightening. As in the case of the National LIFT, GRIP AND FINGER TEST athletic machine.

Most arcade machine collectors and dealers will say, "Yes, I've seen (or sold) one of those." Yet the "those" they're talking about is most likely the COMBINATION STRENGTH TESTER made by the National Novelty Company in Minneapolis, Minnesota, starting in 1901. The original machine, also a National, predates that by a decade, and was made half a continent away. Once the coin machine boom first took off at the end of the 1880s, groups of investors jumped on the bandwagon to make a killing. Half a dozen major corporations were formed in and around New York City with initial stock funding of over a million — a lot of money in the pre-Depression 1890s (and one of the reasons the Depression of 1893 hit!) — dollars. Most notable among them was the highly successful Amusement Machine Company, quickly the leading producer of automatic payout slot machines. Another was National Scale. Most of the other syndicates fell by the wayside, losing their investor's money in fruitless attempts at machine building or overpaying for buildings and land that were never used. A few of the others survived, including the National Automatic Machine Company at 550 Hart Street in Brooklyn, New York.

National Automatic was made up of bankers and investors (including banker Henry H. Bowman, of Springfield, Massachusetts; paper mill tycoon Orrick H. Greenleaf of the same town; Frederick J. Lancaster, of New York City, the coin-controlled scale designer for the National Weighing Machine Company; all led by LeRoy W. Baldwin, banker and machine designer and the driving force behind the National Scale), all dedicated to making as much money in amusement and arcade machines as their mentor, LeRoy W. Baldwin, had produced almost overnight with scales. So it began, with the starting date January 15, 1891.

Machine designer Fred Lancaster, working from British prototypes, produced a much simplified and attractive lifter, adding the grip and finger test features on a front panel below the dial at hand height. His 3-way LIFT,GRIP AND FINGER TEST was an immediate saloon success, and National Automatic was in production. Lancaster added peanut vending and punch bag machines to the line by the late 1890s, with National Automatic doing far more than just scraping along. By the end of the century, they had sales offices in New York, Boston, Baltimore and Philadelphia. But around 1901, when LeRoy W. Baldwin decided to become a banker, financier and stock trader full time and get out of the scruffy coin machine business, National Automatic tumbled (while National Scale survived under other management). National Novelty in Minneapolis picked up the machine (and may have even picked up their name) from the Brooklyn builder, making it their flagship piece. In later years it was copied practically nut for bolt by Mills, Marshfield and Exhibit Supply.

Edison Manufacturing Company
KINETOSCOPE Floor Peep Show
1894-1896

It's the first movie machine. It's the first coin-op parlor machine. It's the first coin-controlled amusement machine (after the scale!) to capture public interest. And it's the first of a long line of peep show machines that in one line led to projected films to create Hollywood and the motion picture industry while a divergent line also led to boxed coin-ops in back alley arcades where patrons could see girlie shows for a nickel. In short, it's the beginning of everything that motion on film or flipped prints became. For a brief 4 or 5 years it was the biggest name in coin machines — KINETOSCOPE — soon to become lost and forgotten. Many coin-op enthusiasts reading this book will be seeing this name for the first time.

There aren't many of these machines left in the world — less than 10 — and all are identified and highly regarded as significant museum pieces. No more than 2 are known to be in private collections, yet there must be more. They were built in the United States and (without benefit of license) England to be sold and operated in every industrialized country and some that weren't. Yet, aggressive 1980s advertising for surviving parts and examples only produced a cabinet and spool bank out of a junk shop owner in Idaho Falls, Idaho and nary a private owner who wouldn't sell. The same frustrated enthusiast, in agony over the inability to own one, spent a small fortune to fill out 2 empty cabinet and reproduce 5 more examples, one for himself with the others built to order to cover his costs. It can be said to be one of the most sought after vintage coin machines ever built. And will continue to be looked for now that its importance has been broadcast. It's the beginning of the Penny Arcade.

First introduced in a Broadway, New York, Kinetoscope parlor in the spring of 1894 (as a non-coin-op machine, attendant paid) and quickly moving to Chicago and westward, by middle 1894, the Edison COIN KINETOSCOPE (the "coin" soon dropped) was a stand-alone, nickel play machine. Typically they were put up in banks along the wall of a dedicated arcade that also had Edison Model M PHONOGRAPH machines that you listened to with ear plugs. The Edison company also produced the software for these machines in the form of 50-foot, 1-minute movies, starting with "Fred Ott's Sneeze" for which a copyright was requested on January 7, 1894 (and assigned on January 9th). These early motion pictures are as rare as the machines and are sought after by movie collectors, so there is a lot of competition for this early Edison material.





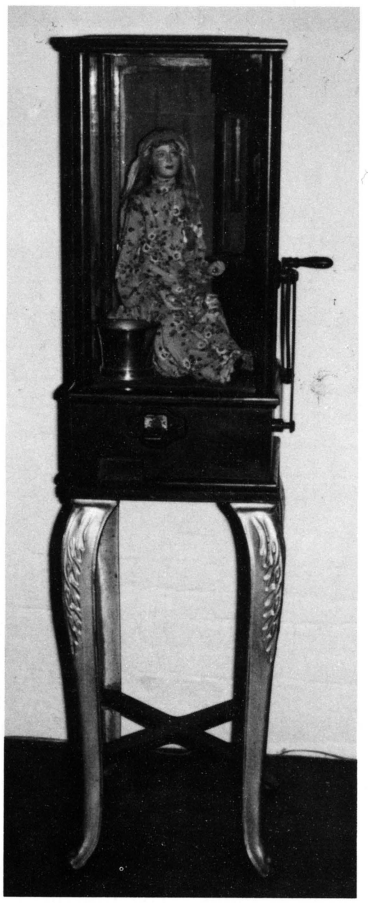
Courtesy of the Academy of Motion Picture Arts and Sciences.

The KINETOSCOPE is interesting both for what Edison (actually, his assistant William Kennedy Laurie Dickson) invented as well as what he didn't. For instance, the KINETOSCOPE does not have reel-to-reel take up but instead has a more complicated series of take up spools with the film on an endless loop. It ran from start to stop, and then ran again with the next coin. All of this is explained in detail in its Patent No. 493,426, "Apparatus for Exhibiting Photographs of Moving Objects" issued to Thomas A. Edison of Llewellyn Park, New Jersey, on March 14, 1893 (following an August 24, 1891 application). The patent may show the application, but it doesn't show the machine. That came later. But the spool take up is illustrated and explained.

If you just have to see one of these machines to get the feel of where the arcade machine business came from, there's one in the library of the Academy of Motion Picture Arts and Sciences in Los Angeles. The Henry Ford Museum in Dearborn, Michigan, has one, but it's not on display. One of the replications is on display at the Museum of the Moving Image in New York City, with two at a similar museum in London, England.

Roovers Brothers
MADAME ZITA "Mechanical Zita" Floor Fortune Teller
1895-1903





Bob Legan Collection.

To an arcade machine collector, having a Roovers is tantamount to having made it. Any collector with a Roovers is world class. Now come the fine points. Having a Roovers mechanical (as opposed to electrical) is at the upper end of the pecking order. After that, the older the better.

The Roovers brothers, Alfred and Alexander, made their first automaton if 1889. It was a dice thrower called the EDUCATED MONKEY, with fortunes read (or over-the-counter payouts made) based on the free throw of the dice. Elegant and complicated, none seem to have survived the years. Next in line, coming a little over 5 years later, is this machine, the all-mechanical MADAME ZITA. Playing on a penny, you put the coin in, pulled the gut busting handle (because you were charging up a lot of springs, levers and gears) and ZITA the gypsy lady went into action. She lifts the handle in her left hand, selects the next fortune card that she moves across the front of her body, drops it into the cup (where it falls into the delivery chute in front of the machine for you to pick up and read), blows you a kiss and settles back for the next customer. It's eerie! It's marvelous!

The detail in this machine is astonishing. The doll face and figure, colorful clothing and carefully crafted hands make it valuable as a doll. And that totally ignores the wondrous workings inside the figure. It is totally articulated. Both hands and arms move in unison, while all sorts of rods and cams go through the torso to make this a classic example of late 19th Century automaton art. The Roovers brothers would go on to make a wide variety of other articulated fortune tellers — PUSS-IN-BOOTS, the ELEPHANT, the DONKEY, and others — but all would owe it all to MADAME ZITA as the mechanisms were virtually identical. The other machines would also be made under a variety of company names, becoming electrified in the 20th Century, and being made and sold into the 1930s (something not realized by most collectors).

MADAME ZITA has another claim to fame beyond her uniqueness and articulation. She established an arcade machine format. Small though she may be, she left a big impression on other machine makers. The directly competitive Mills Novelty Company of Chicago and The Caille Brothers Company in Detroit both picked up on the idea and created much larger "boxed lady" fortune tellers. In the teens and twenties, Wm. Gent and the Doraldina Corporation made even larger machines based on the same concept, becoming the lead and front door machine for amusement park and dedicated arcade locations. Then, in 1950, the Genco Manufacturing and Sales Company in Chicago practically duplicated the Roovers product cam for cam to create their own countertop GYPSY GRANDMA, a testimony to the enduring qualities of the original. Not a lot of coin machines can be recreated over 60 years later and still earn their way. Yet MADAME ZITA did it.

ZITA is patented, with 4 pages of drawings of the parts and assemblies that make her go. They make a wonderful framed backdrop for any arcade machine collection. It's your own way of having a Roovers in-house for minimal cost. You'll want Patent No. 553,872, "Vending-Instrument," patented by Alfred W. and Alexander H. Roovers, of Brooklyn, New York, dated February 4, 1896.

Watson Machine And Novelty Works

MEDICAL BATTERY Counter Shocker Machine

1897-1898

What a marvelous looking piece of 19th Century machinery. When the first of these machines were found they could not be identified as to who, place or time as the nameplates (mounted in the front, just above and between the handles) were almost always missing. Then, when nameplates did show up they identified two different companies, both in Detroit, Michigan. It took years to piece the story together, and that came only after its patent was identified and a name could be applied to the machine.

The name was Nelson M. Watson, the man who applied for a patent on the shocker on December 27, 1897 and got it the following August 2nd. Watson got Patent No. 608,496 for a "Coin-Controlled Medical Battery," a quack medicine description for an early arcade shocker, although Watson seems to have believed in the curative power of electricity as evidenced by the fact he sold it to drug stores (most of those found have been associated with drug store rather than arcade connections). Watson's background had been in electrical goods rather than coin machines, but when fellow stockholders George and Robert Brady put up enough money to get a company started, Watson found himself in the coin machine business. They formed a firm called the Watson Machine And Novelty Works at 26 Griswold Street in Detroit, starting date January 1, 1897, and got rolling with Watson's machine. Nelson Watson was president of the firm, Bob (who liked to call himself R. McClelland) Brady was secretary-treasurer and patternmaker Edward Clarke figured out all the castings to make the machine. By the time the patent was applied for in December all the bugs had been ironed out. But not the partnership disagreements. Less than 2 weeks after Watson applied for his patent the stockholders met and decided to take Watson's name out of the company. It was renamed the Detroit Brass And Iron Novelty Company, effective January 7, 1898, and George N. Brady took over as president. R. McClelland Brady stayed on as secretary-treasurer, and Watson kept inventing, improving the MEDICAL BATTERY and adding his ELECTRIC TREATMENT to the line in 1901.



William P. Dougherty Collection.

The real machine is in the grip handle and the dial with the pointer at the top. But it took a while to get the MEDICAL BATTERY going. All the action is in the right handle. Turn it the first 90 degrees and it winds up the clock by a chain, timing the machine for 30 seconds. All the nickel plated mechanical guts below the plain black metal in the center are clockwork timing components to time the completed circuit to provide the shock. That comes from the next 90 degrees of handle turn, increasing the power as long as you can stand it. And it's a zinger! The battery is in the base, behind the left handle, and it's strong enough to just about send you through the roof.

Restoring a Watson MEDICAL BATTERY is easy enough if it hasn't been damaged much. But there's a problem there. As most of the mechanism is exposed, covered only by glass, in the event the glass is broken (which is the way most of these things have been found, or even mechanism only) the works are liable to contact. Once the delicate coil in the center has been cut or nicked nothing works unless the coil is rewound. And that's tricky, as it needs the same wire and number of turns as the original. But if the coil is okay, fix the box, polish the gear and crank her up. You'll know it's there.

Midland Manufacturing Company

ELECTRICITY IS LIFE Counter Shocker Machine

1899-1909

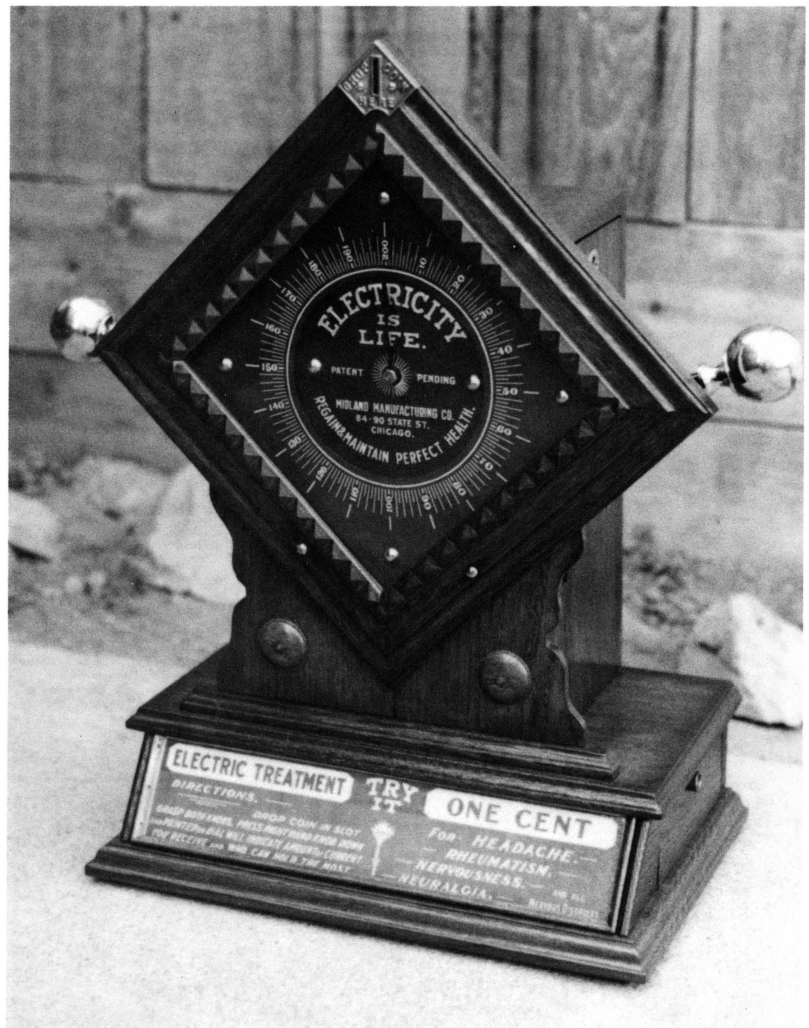


Photo by Bill Whelan.

This is the machine most people think is the first shocker, if not the first arcade type machine. Little wonder, for when it comes to old pre-1900 coin operated machines that aren't gambling devices there are more of these around than any other. Based on the surviving numbers one can just imagine how many were sold. Not only that, they were a number one item on the market for a full ten years, making them the most generic (and copied!) shocker of them all.

The Midland ELECTRICITY IS LIFE (the title is a Victorian theory about electrical currents rather than a machine name, and was used for a wide variety of products and philosophies, including quack medicine machines) is an early Chicago machine and one of the devices that placed the coin machine industry squarely in the prairie city. The original machine was invented by Winfield S. Bosley of Chicago, an independent coin machine developer who got hooked up with the Western Company, a small 1898 producer of a bartop combination dice and lung tester they were assembling at 84 to 90 State Street in downtown Chicago. Popular in Chicago saloons, Western started to sell their COMBINATION NICKEL-IN-THE-SLOT CIGAR AND BLOWING MACHINE through the pages of *The National Police Gazette* (later it was called the LUNG TESTER AND DICE SHAKING MACHINE and finally the COMBINATION LUNG TESTER) and began to draw outsider orders. So when Bosley strolled onto the scene early in 1899 Western smelled the Big Time, changed its name to the Midland Manufacturing Company (in spite of the fact this National class name was already being used by a major Chicago manufacturer of electric street cars and street railway equipment), kept its 90 State Street address, and gave its grandiloquent name to Bosley's shocker, putting it on the market in April 1899. One of the principals of Midland, William C. Backhof, who had come up from St. Louis two or three years before (and whose background was in product design, having made a quilting frame and curtain stretcher in St. Louis, the latter picked up by a Chicago manufacturer in 1896), redesigned Bosley's ugly cabinet and came up with the classic ELECTRICITY IS LIFE case. It wasn't until the fall of 1899 that they made their big push for the machine, advertising heavily in the saloon and show business trade publications. It became one of the top arcade class machine sellers of all time.

We keep saying arcade, but that was not the placement for Midland's ELECTRICITY IS LIFE. More than anything it is a saloon piece, designed to bring some measure of health to a totally unhealthy environment. The front paper on the machine explains its purpose: "Electric Treatment. Try it. One Cent. Directions: Drop coin in slot. Grasp both knobs. Press right hand knob down and pointer on dial will indicate amount of current you receive and who can hold the most. For Headache, Rheumatism, Nervousness, Neuralgia and all Nervous Disorders." Sure! Push that right hand knob down and you forget all your other problems.

Even after its sales life had all but ended, Midland passed it off to the Enterprise Vending Machine Company, Inc. (made up of mostly Midland People) and it got a new start on life. Most are in fair shape or eminently restorable as the box protected the coil. Cabinet trim varies all over the map depending on when each particular model was made and what stock millwork molding was available at the time.

Automatic Spirometer Company

AUTOMATIC THERAPY Counter Shocker Machine

1900-1902

One of the busiest towns in the early history of arcade type machines is Medina, New York, at the far northwest corner of the state, half way between Rochester and Niagara Falls. The Automatic Spirometer Company, Medina Company, National Spirometer Company and the American Spirometer Company were all located there, and when it comes to spirometers, there are more from these four companies around than any other. Except for the nagging fact that a careful review of the town directories and even the newspaper files of the 1890s and early 1900s reveals nothing about any of them. Nothing. Not even their names. It's as if they never existed.

Did someone say spirometer? What's that? It's a word that barely keeps a toehold in modern dictionaries. By definition, it is "an instrument for determining the capacity of the lungs." Alright, how do you do that? With calipers? Naw! You blow into a tube and try and move a dial pointer. Blow hard, it moves around the clock face more than if you blow soft. That hardly sounds scientific, and the spirometer wasn't. It was just another gimmick that measured the strength or skills of the bar crowd or concerned drug store patrons, with the so-called measuring provided by — you guessed it! — a coin machine.

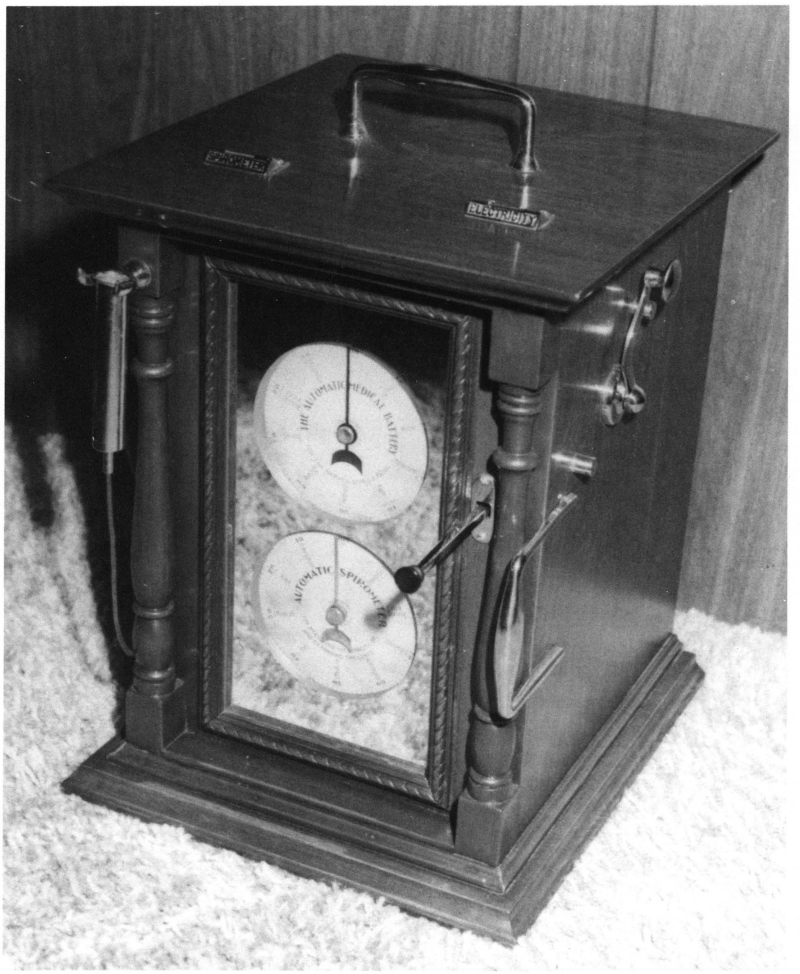


Photo by Bill Whelan.

The third part of our tale of wonders (mostly wondering what Medina, New York, has to do with all this anyway) is the notation on the face of most of these machines. On the top of the double-dial version, a combination spirometer and shocker, it generally says (in small print, circular around the hub) "Patented by E. J. Colby" whereas the wheel name is THE AUTOMATIC MEDICAL BATTERY. Most times the bottom dial will also have a small notation, saying the same thing below its AUTOMATIC SPIROMETER name. Now we've got something to sink our teeth into. We know Edward J. Colby. We're talking early. 1889 early. But we are also talking half a country away. Colby had a lot of different producing companies in Chicago, making electrical goods to coin machines. And that included scales, strength testers and a dead ringer for the Automatic Spirometer AUTOMATIC THERAPY of 1900. Only it was almost a decade earlier.

But we just may have gotten to the bottom of this thing. The Colby Specialty Supply Company COMBINATION LUNG TESTER of 1892 is the same machine. It was sold (maybe even made) by a variety of Chicago producers for the next 10 years, including Berger, R. J. White, White Manufacturing and others. The Colby original was patented on January 17, 1891, Patent No. 445,220, "Coin-Operated Electric Coil" with that lung tester attachment. The White catalog copy for the same machine says: "Just what you need if you are tired, nervous or out of sorts. By dropping coin in slot and taking hold of each handle you can regulate the current of electricity to suit yourself. Thousands of families have this machine in their home. (Note: True! Colby made those, too. It was a quack medicine machine and not a coin-op) for Electric treatments. A Lung Tester attachment also very beneficial as it expands the chest and strengthens the lungs, thereby giving renewed health and vigor, to the weak, also keeping the healthy in normal condition, preventing the weakening of the lungs and contraction of the chest (Note: Which was baloney. It just made you winded. Plain breathing was better lung exercise).

What happened was that Medina, New York entrepreneur Daniel A.A. Buck and his three sons were making the Colby's under license, plus a line of their own machines, with the company name changing four times over the years.

Mills Novelty Company
ELECTRICITY IS LIFE Pedestal Shocker Machine
1900-1902



Marvin Halpert Collection.

Nothing is harder to identify than the uncataloged machine. That's not to say that it was never cataloged or had its own flyer, It probably did. It's just that no advertising (assuming all the media has been checked, and certainly most of it has), mailers, spec sheets or catalogs seem to have survived the years to show (identify, and date) the machine. Until something does, it's a "Whatzit?" But even worse, there's nothing tougher to justify than an uncataloged machine by a major manufacturer. Caille Bros. had some, Watling had a lot, and Mills Novelty Company had only a few, it you listen to some people. And none, if you listen to others.

Yet here's a Mills ELECTRICITY IS LIFE on a wooden pedestal that most people don't understand, some people accept as a possibility and others call an outright fake. Okay, fake, fair or foul? This machine stumped most of the so-called experts for about as long as most "Whatzits?". But you've got to believe in its integrity because, on inspection, the pedestal wood is as old as the cabinet and matches perfectly at its contact points. So the machine was made this way. Secondly, its a solid Mills Novelty IMPERIAL shocker, only on a pedestal and with its own name. So that's strange enough. Except. The early Mills Novelty IMPERIAL had the copy "Electricity Is Life" over its THE IMPERIAL name. Therefore the new name isn't as strange as it might seem. The real confusion comes in the cabinet. THE IMPERIAL was in elegant cast iron, with lovely figures on each side. But our floor machine is in Plain Jane wood. How come, one might ask? We won't blow the answer yet, but we should go backwards in history a bit. Remember Winfield S. Bosley, who took his shocker to Western, who, in turn, changed their name to Midland and produced their countertop ELECTRICITY IS LIFE? Well, Mills blew their cookies as they had been talking to Bosley, too. So they put it to him. Improve the shocker and get it patented in Mills' name. It worked. Mills paid for the whole shot, with Mills' attorneys Dyrenforth & Dyrenforth & Lee working out the patent and applying for it on July 2, 1900. It came through on April 23, 1901 as Patent No. 672,665 "Coin-Controlled Electrotherapeutic Machine," issued to "Winfield S. Bosley, of Chicago, Illinois, Assignor to Mills Novelty Company, of Same Place." So Bosley got his patent, Mills owned it, and ...a very close approximation of this plain wood cabinet was shown in the patent. The only change was to give it the octagonal frame of its cast iron sister.

But why the top heavy machine on an oak pedestal? The description showed up not in a catalog but in a lawsuit. When Dyrenforth & Dyrenforth & Lee sued Paul E. Berger for Mills over the coin head of the OWL machine in the summer of 1901 — Mills had a patent on it, and Berger copied the device — the transcript included this series of answers by George A. Fuller, a Mills cousin by marriage that H. S. Mills had put into business as an operator: "I see four of the machines down here to the station of the elevated road at Wabash and Madison Streets. They are an electric machine. They are a little machine that is on a stand possible about three and a half feet high and has a dial on the front, and then there is two little nickel handles comes out on each side; you drop a penny in and that gives you a shock of electricity. They have been there several months...on the elevated station." So they were made private label for a private (and family!) operator. Some fakery pedestal shockers have been put together, so watch it. But if the base looks like this, it's probably real.

Mills Novelty Company
NEW QUARTOSCOPE Floor Peep Show
1901-1903

The SAPHO stereo view machine made by the Sapho Manufacturing Company of Chicago (and also made under license by Mills, Berger and White) revolutionized barroom peep show viewing. It stood on the floor (and didn't get knocked around the bar like the earlier Griswold, American Auto-Machine and Automatic Electric Company machines) and allowed the possible viewer to have a free peek at one stereo by pushing a doorbell buzzer on the right (which quickly flashed a nudie to capture undying interest). It sucked in coins like a sponge. Mills Novelty Company bought in on the idea and made their own SAPHO QUARTOSCOPE in 1900. Then they bought out Sapho, and came back with their own much improved (and much better looking) NEW QUARTOSCOPE in January 1901, followed by their IMPROVED QUARTOSCOPE with inside refinements in November. They ran with these models until 1904 when the QUARTOSCOPE was further improved (which happened once again after that) making the Mills QUARTOSCOPE one of the most successful arcade peep shows of all time.

The exciting part about the QUARTOSCOPE was that it had four full shows of 12 views each, so a viewer that wanted to see it all hung in there and kept pumping in money. In the transition process from Sapho Manufacturing to Mills Novelty Company president Herbert S. Mills had the whole machine re-engineered and applied for a patent in his name. And he got it. Filed on January 14, 1901, Patent No. 676,146 on "Coin-Controlled Apparatus" was issued to Herbert S. Mills of Chicago on June 11, 1901, fairly fast for those days. Mills Novelty ads for their NEW QUARTOSCOPE in summer 1901 issues of *The National Police Gazette* stated: "Our NEW QUARTOSCOPE (is) The most perfect picture machine on the market; special prices to dealers. Sample machine, $25.00 and up. Shipped C.O.D. with privilege of examination before purchasing. Write for prices and beautiful illustrated catalogue." The original marquees were small, in a small iron frame, with the copy merely naming the machine and



Roger Simale Collection.

giving directions. Soon the operators — and finally Mills — woke up to what was needed to capture the play. Large photo and lettered marquees added provocative show names and girlie pictures and a star was born. These machines ran that way well into the 1930s, changing views as clothing styles and underwear fashions changed.

It was in those "...beautiful illustrated catalogues" that the sales were really made. They explained that the Mills IMPROVED QUARTOSCOPE was a "View machine in handsome cabinet of cherry, antique or Flemish oak, has four sets of views, twelve in each set, showing one set for a nickel or four sets for twenty cents. It has two sets of



Joe Vojacek Collection.

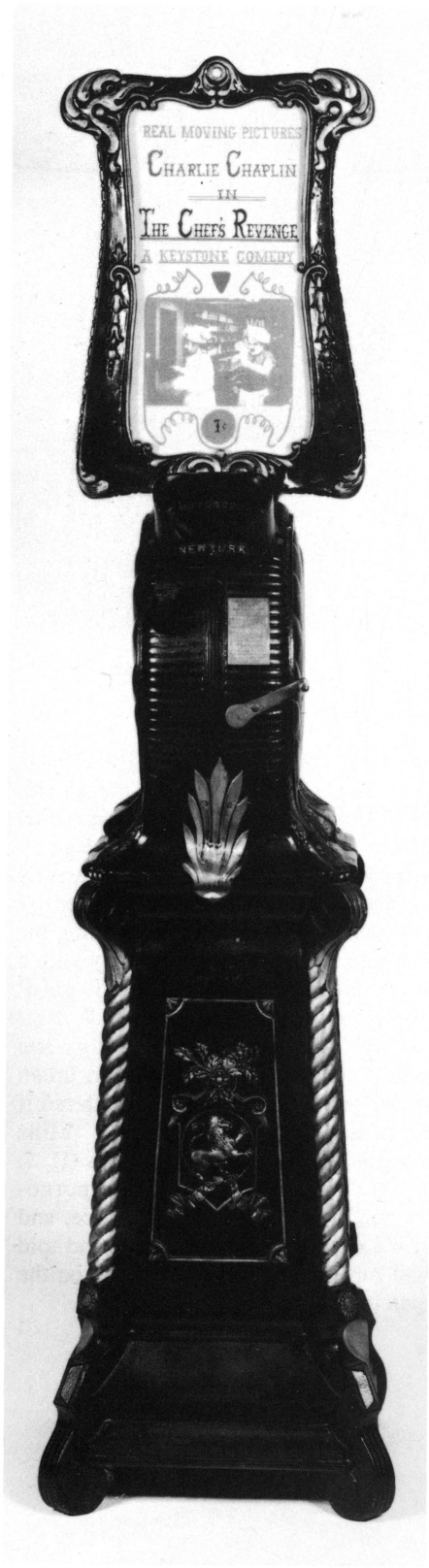
batteries, and is also fitted for electric light house current (which meant you could plug it into an electric light socket with a screw-in plug adaptor). Battery and electric light can be used separately or in conjunction; both are worked by automatic switches without opening the machine. It can be made to play with a good penny or a good nickel; coin-detector throws out all fake coin."

By 1903, to simplify inventory and reduce costs as a result of rapid urban electrification, a discount was offered if the battery system was dropped. Mills also got out of the views business (H. S. Mills went to jail for having "pornographic" stereos around the office, and didn't want to face that again) and told their buyers to get their software on the open market.

American Mutoscope and Biograph Company

MUTOSCOPE MODEL DL "Iron Horse" Floor Peep Show

1901-1909



Gil Shapiro, Urban Archeology.

This is the most successful arcade machine of all time (Midway's PAC MAN of 1980 sold more, but the MUTOSCOPE has lasted longer), and to many aficionados if there are no MUTOSCOPES on the premises, it isn't an arcade. Disneyland in California and Disney World in Florida (and other theme parks around the country) felt the same way, so starting in the 1960s an active and ongoing market opened up for old MUTOSCOPE "Clam Shell" and other cast iron cabinet machines that had been gathering dust and rust in scruffy old arcade locations around the country since their lease and placement over half a century earlier. Like fine old buildings, they had endured by living in poverty for years before being rediscovered just in time to be preserved in their original glory.

As so often happens in the field of antiques, just as some elements were tossing out, junking or selling cheap on their MUTOSCOPE machines, others were coming in to the market to bid high and higher to get the old machines. Quite a number of vintage coin machine dealers made out rather well by being in the middle of that transfer process. As always, the net result has become a shortage of machines, now being sold at high prices, with reproductions entering the marketplace. But that's not all bad. The repro cabinets are in aluminum (which makes the machines a lot lighter to move) and the mechanisms are far better than the originals. Production shortcuts taken back in the early 1900s, when these things were being made in such high volumes it looked like it would never end, substituted pot metal for brass. As a result, parts break and gears skip in the originals. If you don't keep the gear teeth cut sharp on the small worm gear and larger drive gear, the skipping will not only ruin the shows but finally destroy the gears. A lot of small points of wear react in much the same way. The repros avoid all that by using better material, and give any and everyone a chance to own a MUTOSCOPE. Ditto for the reels. The old ones are often worn out (or worse, you'll find one made for the ganged arcade installations that have their images facing the wrong direction, which will have to be taken apart, reversed and re-glued to the drum. So watch out for that one!) while the newer repros run well (although their copied images are generally duller). I'm not touting restored or repro MUTOSCOPES, but I am saying that if you just have to have one of these around the house there is a way to do it.

While the patents for the MUTOSCOPE are issued to Herman Casler of Canastota, New York (where much of the machine production took place) it was really William Kennedy Laurie Dickson (the same man that engineered the KINETOSCOPE for Edison) that created the process and its viewing systems. The machine went through a long (on models, but short on time frame) developmental stream, from wood and ambient lighting to metal and interior lighting, greatly improving the image each step of the way. The wooden models lasted about 3 years (only one American example has ever been found, but about a dozen English, French and German) and then the "Iron Mutoscope" came along. First it was in the plain "Clamshell" top MODEL D made by the American Mutoscope Company and then the full "Iron Horse" MODEL DL that had the Clamshell plus a rearing horse in the cast iron base. The early models were leased, not sold. It was with the MODEL DL that the newly renamed American Mutoscope and Biograph Company (to indicate its entry into projected moving pictures) started to use actress Anna Held in its promotion and finally sell the machines on the open market.

Mills Novelty Company

WINDMILL CANDY MACHINE Pedestal Dispenser Machine

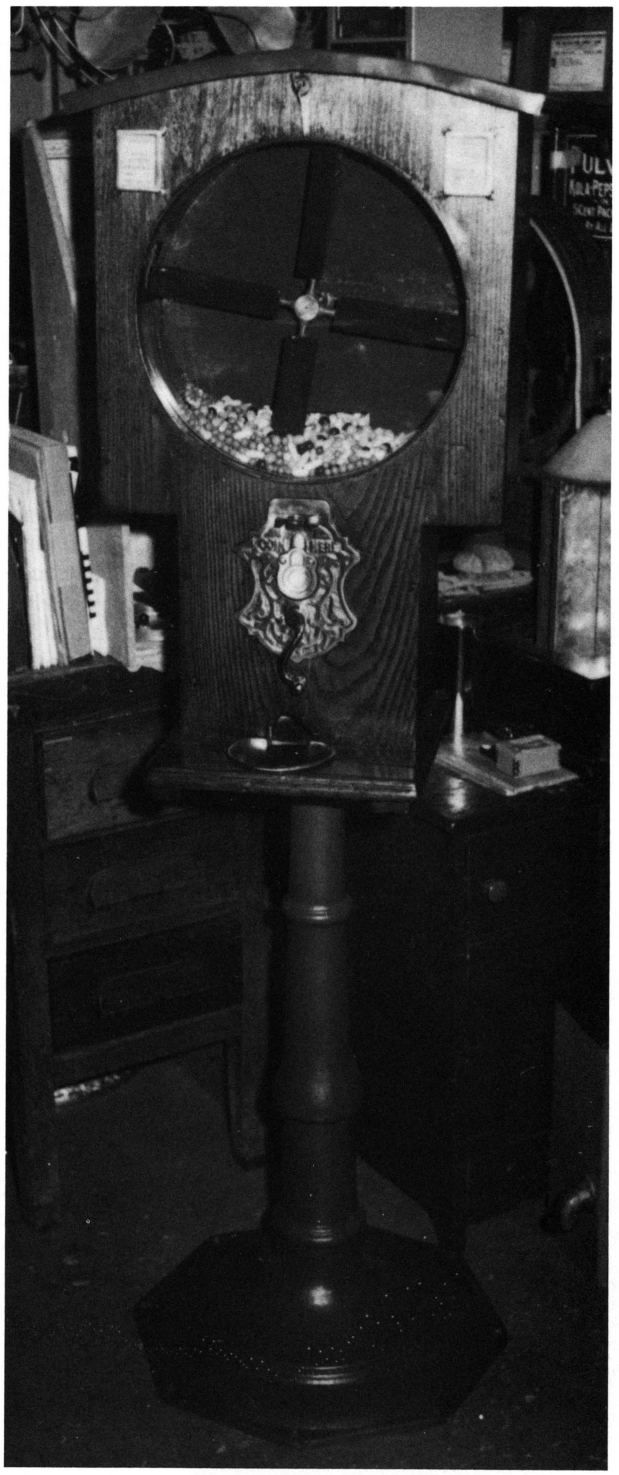
1902-1929

Candy hardly seems a fit subject for an arcade machine, particularly with all those furtive guys with their faces locked into the viewers of the girlie shows. Except the early 1900s arcade wasn't like that at all. True, there were a lot of racily dressed, half undressed and otherwise ladies in the KINETOSCOPE, MUTOSCOPE, SAPHO, and QUARTOSCOPE viewers across the land, but they were largely in the bars. The dedicated arcades brought in a different crowd. The whole idea was to create a wholesome family atmosphere where men, women and even children could gather for an afternoon of entertainment by dropping pennies and nickels (and an occasional quarter to get change from the change maker at a special counter).

But machines alone won't keep the kids happy. So to fill that hole in amusement time, Mills Novelty Company hit on the brilliant idea of making a candy machine vender that looked and acted like a game. Thus the WINDMILL. First, it was relatively short — about kid-high to accept the coin and work in full view— but secondly, it was intriguing. Essentially a vender, it was only in the beginning of its days that it was promoted and cataloged with other Mills vending machines, with early catalog copy saying, "Arms of windmill revolve when coin is deposited, pick up candy and throw it out through chute." The exciting part was you didn't know what you were going to get. Hard candies, round candies, lozenges and "jawbreakers" were all mixed up in the visible container, plus charms, toys, rings and trinkets. When that windmill made its sweep and churned into the candy mountain to toss something into the trough to come out in front, the kids were screaming as the blades caught, then dropped a premium. In an way, the Mills WINDMILL CANDY MACHINE was an early digger, and may well have led to the idea.

Later promotional copy came closer to describing its charms, saying, "Vends small confection or nuts. Quickly catches the eye and the pennies. A big favorite with the children as well as adults. Well made and attractively finished. Inside the glass front is a brightly colored windmill. The cabinet is also built to represent the mill with slanting roof." By 1906, Mills had pushed their WINDMILL CANDY MACHINE into the media, running ads in *The Billboard* that said: "Profits about 300 per cent. Always ready for business. Candy in sight. Any mixture can be used. All parts touching candy made of non-corrosive metal. Only machine in which candy will not clog. Manipulation impossible. Can be placed out doors. Handsome in appearance." Forever afterward the WINDMILL was cataloged with the arcade equipment, only rarely showing up with other venders.

The WINDMILL had a long and productive life. Virtually unchanged, it appeared in the 1925 Mills catalog with the suggestion that it be placed in, "General stores, candy stores, cigar stores, billiard parlors, pool halls, drug stores, butcher shops, barber shops, athletic clubs (and) gymnasiums," once the arcade locations had decayed to peep show locations and not much else (the equivalent of today's "Adult" book and tape stores). A February 1930 used machine sales list issued by Steffens Public Amusement Enterprises of Oakland, California, lists 3 WINDMILL CANDY VENDERS by Mills at $35 each, which was really holding value. That's just about what they sold for when they first came out 28 years earlier.



Bob Legan Collection.

Mills Novelty Company

1904 PNEUMATIC PUNCHING MACHINE Pedestal Athletic Machine

1903-1913



Bob McGrath, Jr. Collection.

The heavy hitter in the arcade field (if the pun can be excused) in the early 1900s was the Mills Novelty Company of Chicago. Having dedicated himself to the arcade field (with the enormous success of the St. Louis World's Fair of 1904 yet to come) and promoting the new independent business of operating an arcade, Herbert S. Mills authorized a fortune in new machine development and promotion. And that meant old machine improvements, too.

No arcade machine was much older than the puncher. Already sporting the face of John L. Sullivan in east and west coast examples, and long a staple of the saloon trade, the puncher hadn't changed much in its almost two decades of existence. Then Mills took much of the weight (and cost!) out of the machine. The big redesign year was 1903 (possibly getting ready for the 1904 fair), and a whole range of Mills machines were revitalized. The puncher maybe most of all. Long a big boxy device with a punching pad to take up the shock of a human blow, in 1903 someone at Mills figured out that a punch doesn't exert the power and pressure of a push or a pull. The big box wasn't needed. Tests revealed that a pole pedestal was all that it took to survive the blow, provided the machine was bolted to the back wall. So in April 1903, Mortimer B. Mills (father of H. S. Mills, and the true inventive genius in the family, except he couldn't handle money) applied for a patent on a "Blow-Testing Machine," which was issued on September 29, 1903 as Patent No. 740,161. Much smaller, lighter and a lot more attractive that the old punchers with its cast iron filigree trim, the new PNEUMATIC PUNCHING MACHINE joined the line. The trick was in the pneumatics. A punch drove air back and up to register on the dial. It took a sharp blow to do it because a slow press (which ran up high scored on the old style punchers) couldn't generate the blast of air, so no score. The pedestal held the puncher in place, while the wall mount at the top kept it from tipping over. Also, the block of air, with a spring behind the pad to take up the shock (and not break a puncher's hand like the other old hard bag punchers used to do), cushioned the blow for the player.

Big success, right? Well, not exactly. It was still set too tight, and the mass of cast iron below the pad left a strong impression on the puncher's hand if he missed. So after being out for 7 or 8 months, it was redesigned again. This time the 1904 PNEUMATIC PUNCHING MACHINE took hold and remained in the line for years. The cast iron was reduced and moved farther away from the bag, or — as was often the case, as shown in the example here — removed altogether. Most important, the wall mount was moved down to be behind the punching pad as the players were punching these machines in half because of their rigid mounts. The new catalog copy explains it: "The punching bag is covered with the finest quality of leather and is so constructed that the hardest blow can cause no injury to the hand or arm, as air is utilized in a new and novel manner to provide a cushion against which to strike. The upper portion of the machine being hinged and thereby allowed to swing slightly when struck, the constant jar to the mechanism, which exists in all rigid machines, is avoided, thus making the machine more durable. While the steady and great earning qualities of punching machines have been known for some time, there has been...prejudice against them. This we have entirely overcome by correct construction."

F.J. Howard Manufacturer

THE HANDSHAKE "Uncle Sam" Floor Athletic Machine

1904-1905

"Hey, I know that machine!" Arcade machine history has been in such a dark age that until now only a few machines out of the thousands of different machines made over the years strike any note of recognition. UNCLE SAM is one, except this isn't UNCLE SAM. If you recognize it, you're probably thinking of the one made by the Caille Brothers Company in Detroit, or Mills in Chicago (although few people have ever seen one), the version made by the Exhibit Supply Company in the 1920s, or the modern solid state version reproduced by the Mechanical Antiques & Amusements Company in the late seventies. This isn't any of these. This is the first one, made by a company that most collectors didn't even know existed.

The maker is Frank J. Howard, of Boston. Howard got into the business of coin machines around 1894, was a partner in the machine jobbing business of Howard And Scheafe at 564 Washington Street in Boston in 1898, and took the firm and location over as his own around 1900. A supplier of films and stereos for Edison KINETOSCOPE and other peep shows, Howard also had his own machine ideas. The budding arcade market looked ripe, so that's the way he went. But unlike others, who took their direction as machine manufacturers, Howard approached his market as a promoter. He also had a terrific sense of humor to go along with that, as evidenced by his machine advertising flyer. In it, he said: "Uncle Sam, with a jovial smile on his face, stretches out his hand for a hearty 'How-do-you-do?' Now who could resist grasping same? But Uncle Same is all business, and unless you put a coin in his button hole (slot), you will not stir up his inner man; an inserting coin in the slot, however, the dial will register the exact strength of your grip, and act as a reference in strength-testing contests. Wherever the machine is placed there is a veritable scramble for it, by old and young, and it is one of the best money makers on the market.

"The machine is all metal painted in life-like colors and exceedingly simple and durable. We agree to replace any part which may be broken within two years, if same is sent to us, transport prepaid. When ordering please state whether you want the machine to work with a Cent or a Nickel. Orders for foreign countries should be accompanied either by the respective coin, or an exact drawing thereof, giving size and thickness. Order promptly and reserve exclusive rights for your territory. With a number of these machines placed in Cafe's, on street corners, and other public places (particularly dedicated arcades, just then being set-up), you can earn a good income during your spare hours."

Howard must have made a number, for at least one has survived. They were also snapped up by Mills and Caille, both of whom made the machines (maybe after buying out Howard, rumored to have accomplished by Mills). Whatever happened, Howard didn't sell out his firm. He remained in the business until World War 1, making more machines and producing and selling "Howard Love and Fortune Cards" for his own and the newly produced Exhibit Supply Company card machines. Howard was a major supplier to the coin machine industry, yet, in Boston, he was far and away out of the beaten path. After the war ended in 1918, Howard's personal and business directory listings ended, thus all but terminating the Boston influence on the future course of the industry. He was another walk-on, walk-off figure in the arcade machine field.



Mark Schlesinger Collection.

T. W. Peterson Company

MEDICAL ELECTRO BATTERY Counter Shocker Machine

1904-1908



Jeff Frahm, St. Louis Slot Machine Company .



Bill Klugman Collection .

If there was such a thing as an entry level arcade machine for people who wanted to get started making coin machines, the shocker was it. It was relatively simple to manufacture, most of the parts were stock items in electrical supply houses, and shocker routes were successful. Everybody wanted to be healthy, and electricity was life, wasn't it? There were more one-machine shocker makers than any other kind of coin machine with the exception of trade stimulators, and some shocker makers added machines to make longer lines. They shocked their way to success, so to speak, or into oblivion.

The T. W. Peterson Company of Chicago is a good example of both results. Who ever heard of him? Not the coin machine industry for sure, for in all of the city directory and telephone directory listings under coin, vending or amusement machines between 1900 and 1928 there is no T. W. Peterson. Yet here is a full bore fully thought out shocker called the MEDICAL ELECTRO BATTERY made by the T. W. Peterson Company, telephone Haymarket 5821 (a downtown Chicago exchange, early 1900s), made in Chicago, U.S.A. And well thought out it is, with very fancy front, unique coin process (the coin entry is in the center of the machine, above the crank handle, between the two grip knobs) and lots of savvy sayings on the marquee front and back. While the machine name is in its front casting — all of which, with its marquee, looks a lot like a Caille machine, only it isn't — the typical shocker expression "Electricity is Life" is in the marquee, plus the copy: "Strengthen your nerves by a mild, invigorating electric treatment. One treatment one cent." That was on the front. But the back of the marquee has copy, too. It says: "Enjoy Good Health. Electricity. It's great. Try It! Take a shock. T. W. Peterson Co., Chicago, U.S.A." That's a lot of promotional push from some fly by night outfit that didn't know what it was doing. So we've got to assume that Peterson had some coin machine smarts and fully intended to be around for the long haul.

The design of the machine suggests that. The front is a marvelously detailed casting with pillars and dials, with a pointer under the generic shocker copy "How much can you stand?" Mild, invigorating treatment, eh? It sound to me like the Peterson packed a wallop! But it is complicated. Most other shockers controlled the juice by one of the knobs or handles, but not the Peterson. You drop the coin, set the switch right above it, push down on the crank and grab the knobs and zowie! Just as often you probably let go, and the large old C-cell battery tickled the tips uselessly. Unless you regrabbed (hard to do!) or somebody else jumped in.

The Peterson is mounted on a pipe pedestal, so it was a stand alone rather than a counter machine. That suggests cigar counters and pool halls or saloons instead of drug stores. Or maybe an arcade spot. There is encouragement for the latter idea. As secret as the T. W. Peterson Company seems to be, in a pile of notes about old arcade machines picked up by premier paper collector Fred Freid of New York from an old Maine operator of the later 1890s and early 1900s, there is mention of another T. W. Peterson machine. It was called the SPHINX FORTUNE TELLER and it dispensed future husband and future wife cards. No example has ever been found, but it might tell us more about this elusive outfit.

Caille Brothers Company
TUG-OF-WAR "Platform Style" Floor Athletic Machine
1904-1913

"What, me worry?" There's no connection of course, but one look at this machine and the face on the dial, and the trademark character of *Mad Magazine* and his enduring innocuous statement comes to mind. And that's no small trick, when you realize the Caille TUG-OF-WAR came half a century earlier.

By 1904 The Caille Brothers Company in Detroit and the Mills Novelty Company in Chicago were running neck and neck to be the commanding voices in arcade machines. Their lines were so close it was often hard to tell which one of two similar machines were made by one or the other. Except in some cases. The "Mickey Finn" TUG-OF-WAR was one. It was pure Caille, and no one else made anything like it (only a Roovers machine of the period, and the Exhibit Supply "Tiger Tail Pull" of a generation later, were even close), much less Mills. It was really a strength tester, or a variation of the lifter with graphics so unique that it stood out as a class all its own. It was called a combination grip and pull.

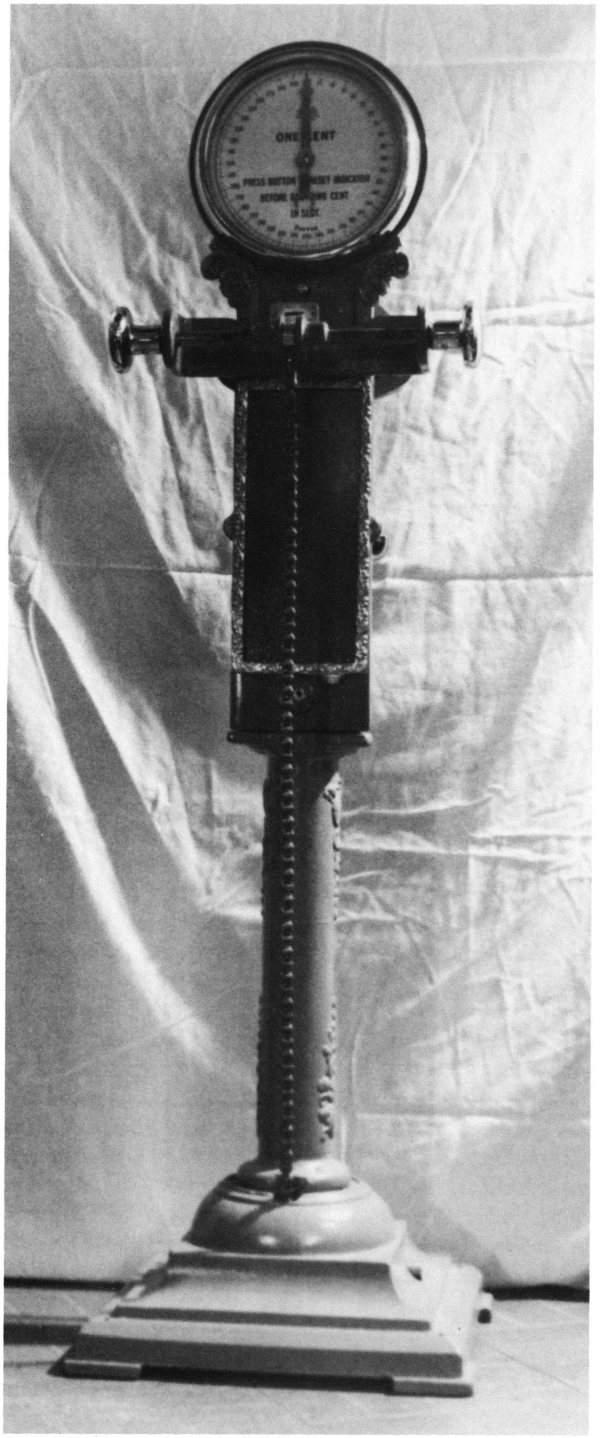
The machine can be precisely dated, for a design patent was taken out on the idea (which is why Mills, or no one else, had it). The whole idea, including the squared off marquee over the round head with the red devil indicator window at top center, was drawn up and submitted to the patent office by Charles R. Reid of Springfield, Ohio, on June 13, 1904. It was so unique that it got its Design Patent DE 37,040 one flat month later on July 12th. And the Caille connection was made right away, with the design assigned to "The Caille Bros. Co., of Detroit, Michigan, a corporation of Michigan." to lock it in the family fold. Actually, two styles were made. The "Cabinet Style" was considerably different (and later!) for amusement park locations. This is the original "Platform Style" with its terrific cast iron figural casing. Yet even within its own niche, the platform styles varied a great deal, as did the marquees. You bought the casting and paid extra for the base. It could be iron, or oak, or hand hewn by the location as in the case of this photographed model. And because this thing was being yanked all the time, great care had to be taken in the setup. The directions that came with it tells it well: "In the setting up of this machine great care must be taken to make sure that the legs are well screwed down. The rear leg (of 3!) should set on top of a joist if possible, and at least one long screw put in so as to reach the joist. Screws will be sent with each machine for this purpose."

Pull the TUG-OF-WAR cord to 750 pounds and a bell rings while a little red devil pops into that top window. Below that it's only what you see on the face dial. In some locations a much larger marquee was set above the display panel on the machine, saying "Have a pull with Mickey Finn. Can you raise the devil's head?" Caille called it "...another one of our original novelties and one that proves a strong puller," ignoring the pun. The description also noted that "The life-size figure of Mickey Finn is of solid cast iron, strongly assembled and enameled in brilliant colors." TUG-OF-WAR remained a stock arcade item for many years, long after Caille ended arcade machine production after World War 1, with a used example selling for $50 in February 1930, identified as Rope Pull.



Gil Shapiro, Urban Archeology.

Rosenfield Manufacturing Company
TWISTER Pedestal Athletic Machine
1904-1910



Bob Legan Collection.

If there was any competitor to Mills and Caille for a leadership role in arcade machines it was the Rosenfield Manufacturing Company of 585 Hudson Street in lower Manhattan, New York City. Starting out as the Amusement Machine Company, one of the first and certainly the most successful of the late 1880s and early 1890s coin machine corporations in the east, when the bloom was off the rose so to speak, the corporation voted to dissolve in the summer and fall of 1896. After everyone was paid off, the firm's president (and its primary machine designer) William W. Rosenfield bought up the assets (probably for dimes on the dollar) and kept things going at the same old address under his own name. Except he changed things. Where the Amusement Machine Company concentrated on automatic payout slot machines for saloons — because that's where the big money was at the time — Rosenfield elected to go the way of arcade machines as the wave of the future. Too much new competition in the payout field, and only National, Roovers, Howard, soon to be added Mills and later Caille in the arcade field, pointed the way to a much more open market. So Rosenfield took the plunge, started out with bartop and floor peep shows and punchers, and music machines (making Rosenfield a very early juke box maker). Then he greatly expanded his line in the early 1900s. True, he still made payouts, but was soon concentrating on a wide variety of physical test machines that were a lot of fun to play. Starting with his large boxy SCIENTIFIC PUNCHING MACHINE, the basic idea was rapidly evolved into smaller cast iron punchers with other play features. With the UNIQUE COMBINATION of 1903 Rosenfield had completely gotten away from blow testing, instead substituting other physical tests. Among the latter machines, the MONARCH PENNY BACK became one of the most popular. Also known as "Twist The Twister," the MONARCH was still covered by the 1903 puncher patent. Then Rosenfield took another step away form that and put the twist handles on the side rather than the front, keeping the same base, stand and dial. The result was the TWISTER of 1904, the same machine only different. The penny back feature was maintained, with promotional copy stating: "The dial indicates the strength of the player and if the player can make the dial register up to 650, the penny will be automatically returned to him." That's an easy way to prove who was the strongest, with players betting on who would buy the next round of saloon drinks being eliminated by those who got their pennies back and those who couldn't muster up the muscle to pull it off. The Rosenfield promotional copy also notes the machine was "perfectly legitimate and can be operated everywhere, as it is not a game of chance," giving you an idea of how the law had shoehorned its way into the public adoration of payout slots to protect the population against itself.

The Rosenfield TWISTER is rare, The serial numbers of the two machines known to be in collections are 340 and 405, suggesting a modest level of production (although the numbers may have been assigned to all models in the basic MONARCH line). Examples were known to be operating in arcades as late as 1931, with one classified ad in the December 1931 issue of *Automatic World* out of Texas offering a "TWISTER machine, perfect, rare (even then!) machine that attracts attention and works perfectly, bargain, $20.00," advertised by an Indianapolis operator named Barton Shipley. The operating arcade with one was in Seattle, Washington.

Rosenfield Manufacturing Company

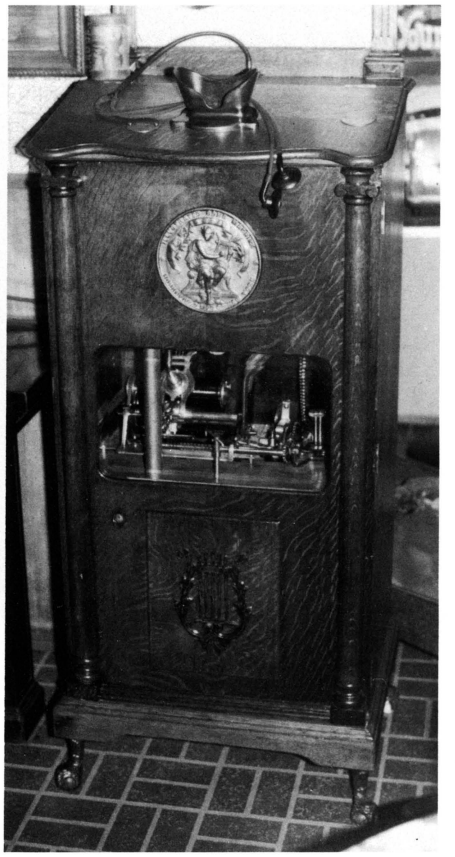
1904 ILLUSTRATED SONG MACHINE Floor Musical Peep Show

1904-1914

While the Rosenfield outfit had a niche all to itself with its broad line of punchers and twisters, it was a showdown against Mills and Caille when it came to its peep shows and music machines. Machine for machine, right across the line, Rosenfield had the same models the other two did. To the uninitiated, they all looked alike (often people who believed they never heard of Rosenfield were sometimes looking at their machines but didn't know it) but to the knowledgeable their appearance is distinctive, with some operators preferring Rosenfields over any other because they thought they were classier. Yet in spite of this acceptance, far fewer Rosenfields have survived the years, making them rarer than their Mills or Caille counterparts.



Bob Legan Collection.



A good example of this distinctiveness is the Rosenfields 1904 ILLUSTRATED SONG MACHINE, a model that filled the same operating ecological niche as the Mills Novelty Company machine of the same name. The Rosenfield entry went back to 1902 and the introduction of the first model, which they called "Four machines in one; Illustrated Machine, Illustrated Lecture Machine, Illustrated Recitation Machine (and) Illustrated Dialogue Machine. The pictures being illuminated by electric light and greatly enlarged by powerful magnifying lenses gives the effect at once beautiful and realistic, and then the pictures pass slowly before the spectator's eyes in perfect unison with the talking machine, the pictures being displayed appropriately to correspond with the words and music of the talking machine." Then there was the entrepreneurial option that allowed operators to do their own programming; "By simply changing the picture holding drum and the lens, the machine can in a few minutes be arranged to show the regular opaque or transparent stereoscopic pictures, of which thousands are published, and by placing a blank record on the mandrel and using a recorder, records can be made in a few minutes describing each picture as it drops into position, then furnishing a genuine illustrated lecture. No end of interesting lectures can be arranged from the great variety of standard stereoscopic views on the market, embracing, for instance, scenes on the battlefield, warships in action, Army and Navy maneuvers, travels in our own and foreign lands, etc."

The original model came in DC or AC. The 1903 model added internal storage batteries for stand alone operation. The 1904 model, used thereafter, added improvements in the Graphophone, including a return device for the Edison type cylinder recordings, developed by Thomas F. Morrissey of West Orange, New Jersey, a former Edison employee, with the process assigned to Rosenfield via Patent No. 831,455 dated September 18, 1906. The basic machine mechanism was another Rosenfield invention, his Picture-Exhibiting Machine developed in later 1899 and early 1900, applying for a patent on February 18, 1900 and receiving as Patent No. 743,930 on November 10, 1903. To buttress his claims for originality, Rosenfield also listed patent dates of July 24, 1894 and September 28, 1897 on the machines, both prior patent art in the field of slide moving and viewing by others that he bought up to cover his backsides. But to no avail. Mills Novelty sued over infringement, Rosenfield countersued, and the whole deal was tied up in the courts for years.

Mills Novelty Company

WIZARD "Wooden Wizard" Counter Fortune Teller

1904-1925





Jack Kelly Collection.

This is the arcade machine everybody knows, and the first arcade machine seen by many who soon become interested in the genre. It is also, to many, the quintessential Mills Novelty Company machine, seemingly pure Mills and the device that started the firm's arcade line. The fact of the matter is that these perceptions are wrong on both counts. The Mills line started in the later 1890s with the OWL LIFTER, and it wasn't until 1904 that WIZARD was added after a buyout pickup of machines. The managers of the Mills sales offices across the country were in fact designated pickers to ferret out buyout opportunities across the country, with the San Francisco and New York City (actually Frank W. Mills, brother of Herb Mills, in Hoboken, New Jersey, right across the river) offices the most active. WIZARD was first made by the Medina Company (or at least sold by them, with another yet smaller eastern maker)of Medina, New York, at the far western end of the state. They called it their WIZZARD. An old key chain from a 1902 operator in Five Islands, Maine, has a WIZZARD FORTUNE key which sort of dates the machine. Buy or borrow, revise or retain, Mills had it in 1904 as "A Prophet that get pennies for profit." But so did the Watling manufacturing Company in Chicago in the same cabinet, although the front paper was different.

The charm of the WIZARD — as renamed, dropping the second "Z" — was the fact it was cheap, only cost a penny to play (although 5¢ models were sold, but rare) and gave the fortune seekers more than just the "Yes" or "No" answers of most of the other fortune tellers on the market. Mills called their WIZARD "The only fortune teller that answers questions intelligently." The machine has 6 questions. According to its announcement literature, "The operator merely drops the coin in the slot, and turns the pointer to the question to be answered and pushes the button (actually a long plunger that actuated the mechanism) on the side. Only one question can be seen for one cent, as the opening is instantly closed when the pointer is turned to another question...but each question has a variety of answers applicable to that one only." To keep the offerings new, both variety and replacement were brought into play: "The novelty is not gone after having been tried once, as the variety of questions and answers always keep it new. The answers are for both the serious and for people looking for amusement. We will furnish you with a new set of answers from time to time."

Mills sold WIZARD as a counter top, or on an oak floor stand (as did Watling). Early models had a large marquee almost the face size of the machine, but later models relied on the front graphics of the machine. Cabinets and paper changed a lot over the years as Mills sold the WIZARD well into the 1930s. The original wooden cabinet lasted until the middle 1920s when an all cast aluminum cabinet took its place. That's not to say the wooden cabinet didn't change. It did, and a lot, with the bezels and trim reflecting the styles (and available millwork) of the day. Many of them ran for years. The one shown on this page came out of an old Prohibition-period barroom in Southern Michigan's resort area said to have been frequently visited by Al Capone and his associates, who pumped it with pennies to learn their fortunes. Prices are modest. No Watling has yet been found. But its the Medina WIZZARD that's worth the most.

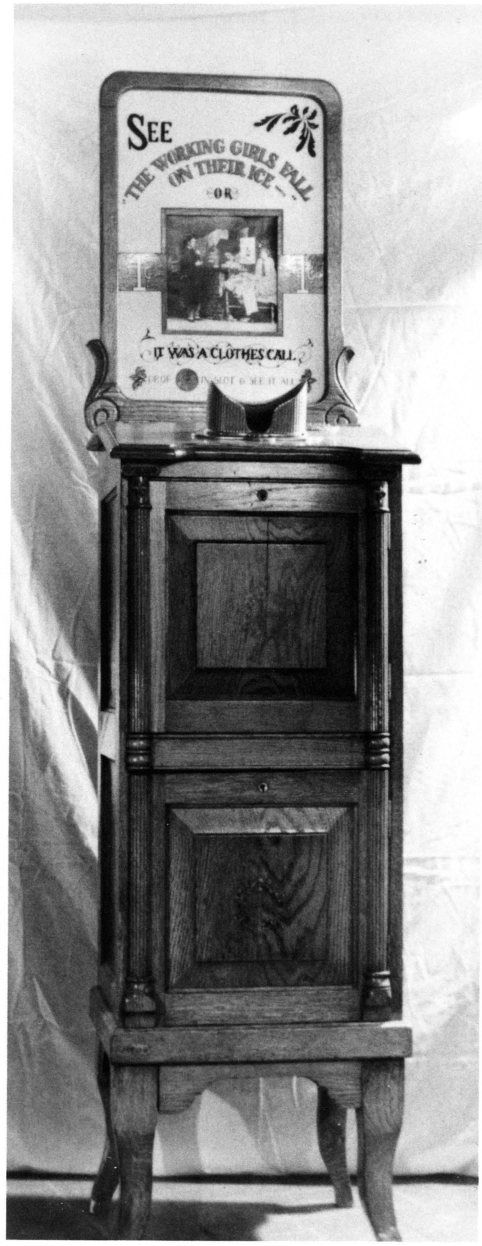
Mills Novelty Company
1905 AUTO-STEREOSCOPE Floor Peep Show
1905-1925

The QUARTOSCOPE nee SAPHO was great. Four stereoscopic shows in one machine kept the till operating. But it was also expensive, and there were times that the fourfold feature wasn't needed. In an arcade, for example, where banks of machines each showing a different show served the one hundred percent amusement customers. So to fill that gap Mills Novelty created the AUTO (meaning self, or single) -STEREOSCOPE. It was the basic Mills "movie" machine, flipping a single set of 15 stereo cards that sequenced motion on coin —penny or nickel — command.

The Mills AUTO-STEREOSCOPE first came out in a counter top model (that could also be stuck on legs) called the UNIT PICTURE MACHINE, with the floor model in a tall wooden cabinet. The year was 1904. In its floor version the AUTO-STEREOSCOPE was stuck on ungainly wooden legs. Its rather plain straight lined wooden cabinet exuded the aura of an inexpensive machine, spring wound to run 175 times between windings. As a plain vanilla peep show, lacking the flash and castings of its more expensive compatriots, the AUTO-STEREOSCOPE did its pedestrian work well. It was enhanced inch by inch during production and then, in company with a number of machines in the line, was recreated in a 1905 model.

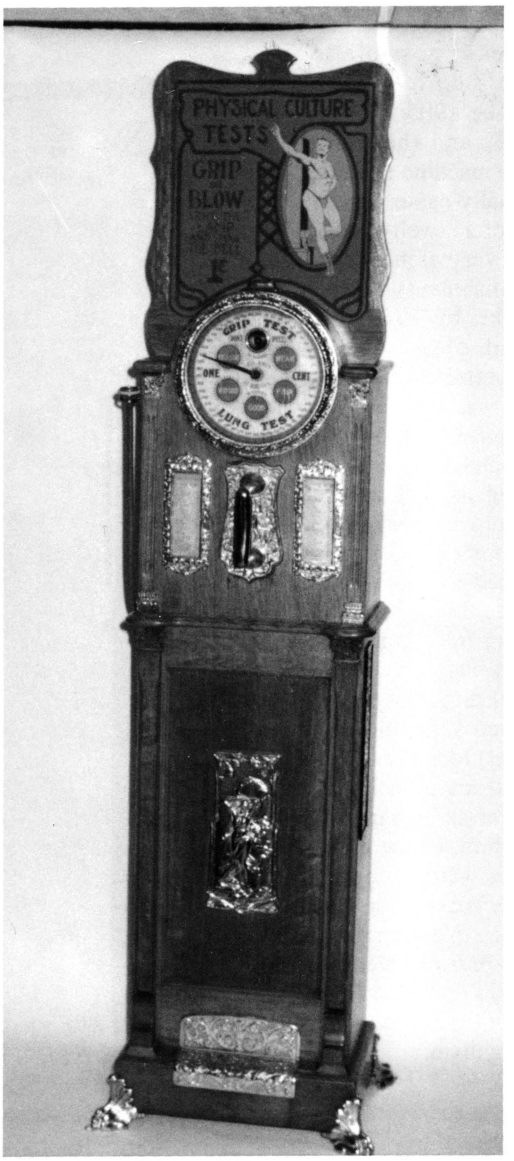
The 1905 AUTO-STEREOSCOPE (sometimes catalogued with the unhyphenated name AUTOSTEREOSCOPE) was the definitive mechanical model (although more elegant cosmetic changes were yet to come). Classic among its features remained that wonderful and even improved durable spring motor, with the other enhancements covered in the catalog copy; "Mills AUTOSTEREOSCOPE is the old reliable picture machine — gives satisfaction everywhere. As an attractive and money-making addition for any location it can't be beat. The mechanism has all of the late improvements — a powerful spring motor which runs machine 175 times with one winding. The pictures are shown by electric lights operated with house current or dry batteries as preferred. A small additional charge is made for equipping for dry batteries. A special lens-cleaning device makes it possible to clean lens quickly."

It was with the 1905 AUTO-STEREOSCOPE, and the other 1905 Mills arcade machine models, that electricity finally came into its own. Somewhat of a novelty available only to the very rich and to commercial establishments willing to pay the freight, by 1905 this inexpensive and clean power source was mainstreaming at a rapid rate. 1905 was the year the cities of Detroit and Chicago were electrified, with Delcowrap cloth wrap wire inching its way across walls, corners and moldings of retrofitted older homes and hotels while being specced into new construction. Plugging things in was a matter of screwing in a connector like the threaded base of a light bulb (an original Edison invention well over a hundred years old that no one has beat yet) to a baseboard hole (which electrocuted a lot of children) or the far safer hanging wire from the ceiling. In the early 1900s arcade wires were strung all over the ceilings to service the growing number of electrified machines coming into service, the Mills 1905 AUTO-STEREOSCOPE drop picture machine being prime among them.



Bob Legan Collection.

Caille Brothers Company
MASCOT "Floor Style" Floor Athletic Machine
1905-1917



Bob Legan Collection

Even though plug-in electricity was the hottest new technology idea to hit the arcades, a lot of all-mechanical and battery machines were still being pumped out, and would be for years to come. Caille Bros. of Detroit rather ran behind Mills in adapting the new power source, with Caille machines tending to be more physically operated than their competitive counterparts. It may have been a function of where they were located, for Detroit was running behind Chicago, the eastern cities and San Francisco in electrification and the clustering of electrical industries. In point of fact, The Caille Bros. Co. was on the cutting edge of Detroit technology in the early 1900s, a fact the budding automotive industry would rely on as they raided Caille for skilled workers.

The Caille advantage, a clear one, was in design. Caille machines had more ormolu, intricate castings and clever integrations of operating ideas than Mills did, thereby earning a role somewhere in just about every arcade in operation. Even the Mills Wonderlands, a separate operating entity owned by the Mills family, often had a Caille machine or two. One of the more common placements was the Caille MASCOT, a light up double tester for lungs and grip. The machine first came on the market in the spring of 1905 as the ELECTRIC COMBINATION BLOW AND GRIP. A companion piece was the COUNTER COMBINATION BLOW AND GRIP, the same machine without the decorative floor stand. In May, 1905 the floor machine had a tall lighted tower stuck on top to create the MASCOT ELECTRIC TOWER GRIP. As will happen, the MASCOT name was picked up by the unadorned floor version, with the machine becoming known as the MASCOT "Floor Style" as shown here.

The MASCOT did a lot of things, but you had to pick your poison. The machine was described as having a "...dial studded with small colored electric lamps lit from dry batteries. These are lighted one at a time as the indicator travels around the dial making the effect exceedingly novel and attractive. Printed tables show average grip and lung power of persons of various occupations." Yah, sure. Did they list drinkers? Probably not, but this was a very popular saloon piece for years or until Prohibition put the barroom coin-ops out of business.

Explaining its operation, Caille catalogs state the "...large dial is artistically lettered and elaborately ornamented in colors and has a most attractive electric light just below the 500 mark which lights when the blow or grip is hard enough for the indicator to register 500. A bell also rings at this point, and draws attention to the machine, which is an inducement for others to try it. Indicator remains at last test until next coin is dropped, then returns to the starting point. Both the grip test and lung test are under control of one coin slot. Impossible to operate both tests with one coin."

With the machine being pushed, pulled and held in place while a patron tried to blow his lungs out into a small tube at the left, the machine took a beating. Later models added a foot plate, shown here, to brace against. Few surviving models have them. Slot machine collectors will see something else they recognize. The nude lady casting half way down the front was picked up 20 years later and put on the front of the Caille SUPERIOR slot.

Caille Brothers Company
OLYMPIA PUNCHER Pedestal Athletic Machine
1906-1913

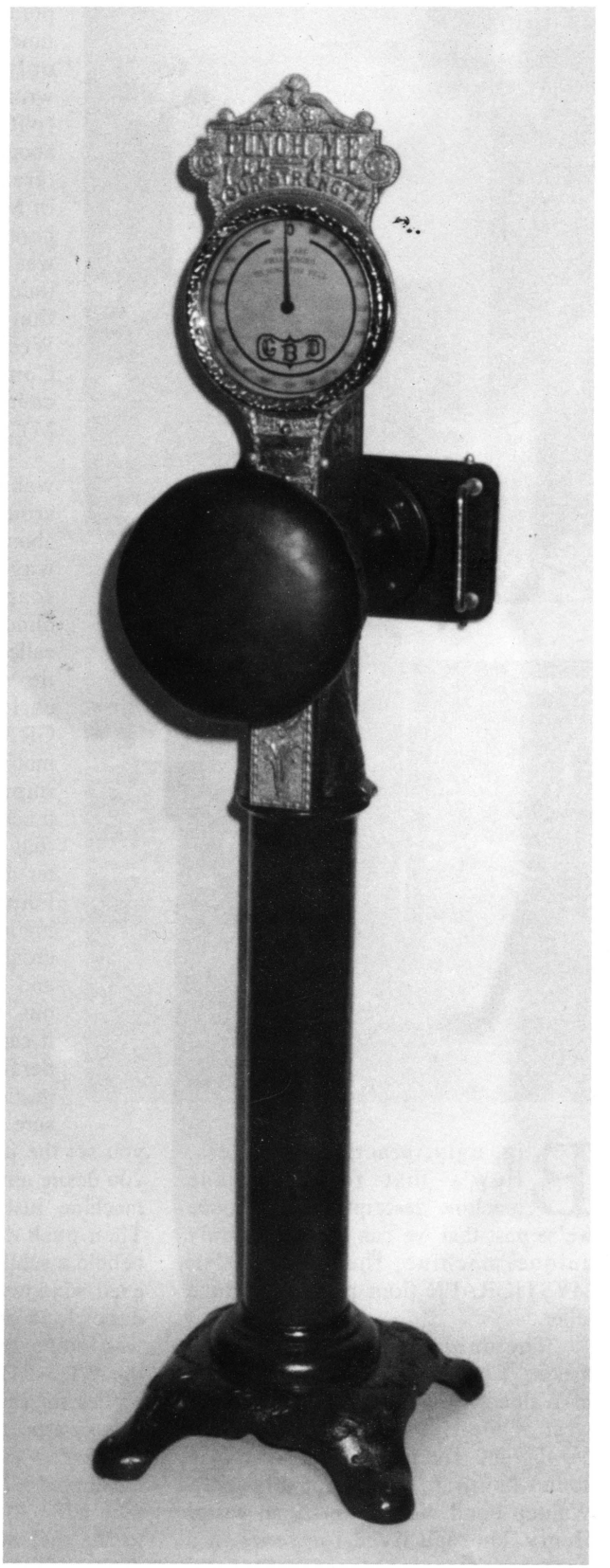
Just because the world turned electric, don't get the idea that the old reliable punchers got punched out. No way. If anything, they had a rebirth in the 1904-1906 period as Rosenfield pursued the business, Mills redesigned, and Auguste Arthur Caille ("Brother Art" to his peers and staff) designed one of the prettiest punchers ever produced.

Caille created a simple device, coated in typical highly detailed Caille castings. It was different enough in concept and features to get a patent (Patent No. 783,667, "Striking Mechanism," Patentee Auguste Arthur Caille, of Detroit, Michigan, filed on January 30, 1904, patent issued February 28, 1905. Get a copy, it's pretty) at a time when the puncher art was crowded. The main features included a coin chute and cash box that didn't get smashed if the puncher punched too soon, as well as a gearing mechanism that converted the force of the blow to a clock face dial. It came out in January, 1904 as the OLYMPIC PUNCHER, described as "...more popular today than ever as operators have found that although these machines work usually for pennies the play is constant and the results most encouraging. Constructed entirely of iron. Elaborately enameled and striped."

Pretty or not, the players punched the living bejeesus out of it. Tough as it was, they were smashing them up, or missing and breaking their fingers against the wall. So Caille added the hug handles so the players could keep their bodies close to the punching target and not spin into the room when they missed. They also renamed it the OLYMPIA PUNCHER (although both names were interchangeable for the entire tenure of the machine).

Not one to miss a bet, The Caille Bros. Co. was soon promoting the hug handles as yet another test, that of pushing one's chest against the pad for a score. Now there's a funny sight, but they sold the idea. The OLYMPIA PUNCHER catalog copy covered it all: "Our original moderate priced puncher. Strong and durable. Entirely of metal in special finish. Nickel trimmings. Punching bag carefully made of curled hair (yuk!) with canvas covering, and fitted with special spring. Outside covering of finest horse hide. Retains its shape. OLYMPIA has hugging handles to show strength of chest and muscles of the arm. Dial registers force of blow. Size 80 x 22 x 19 inches. Weight 125 lbs. Price $35."

People who see punchers in collections can hardly believe them. For years there was nothing like them in the real world of the modern arcade, although some Japanese and other foreign makers have added them to their lines in recent years. The antique punchers are true period pieces; simple, easy to maintain, well built with enormous enduring qualities. It is hard to put one of these machines out of order. But if you do have one, do not forget to wall mount, and watch your punches as they fly. The last thing you need is a small leather bag full of loose bones that used to be your working hand at a time when you are facing a bunch of restoration projects in the shop. The same warning goes to visitors, because the biggest problem with a puncher isn't in the machine. It's in the puncher puncher.

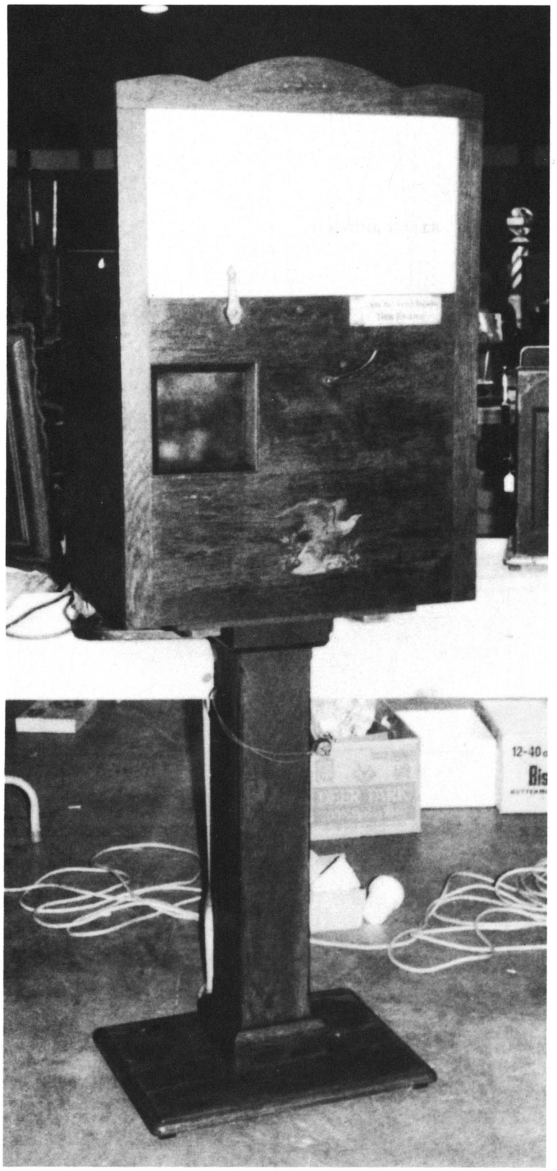


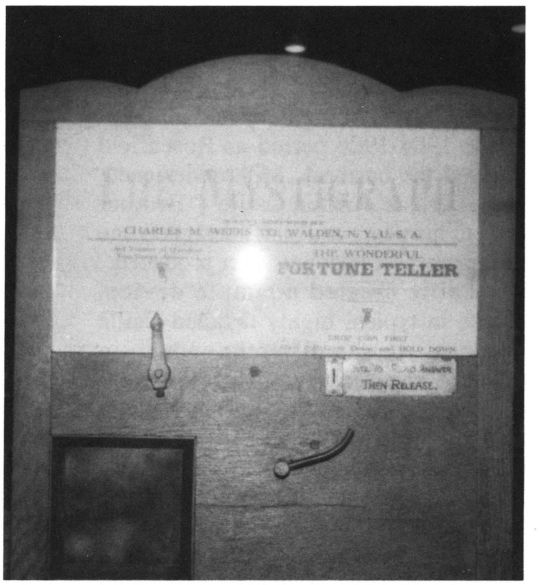
Bob Legan Collection.

Charles M. Weeks Manufacturer

THE MYSTIGRAPH Pedestal Fortune Teller

1906-1913





Bill Klugman Collection.

Big, ugly, practically useless. How's that for an arcade machine description? But once we're past that we can consider a truly unique machine, the Weeks THE MYSTIGRAPH floor pedestal fortune teller.

The uniqueness starts with the maker. Charles M. Weeks was located in Walden, New York, in the flatlands west of the Hudson River just above Newburgh. The name of the town may sound familiar, but it probably isn't. Walden Pond, where American writer Henry Thoreau lived for years in a small hut, dropping out of society and living on $8 a year in the 1850's (multiply 8 times 10 times 10 times 10, and that's still only $8,000 a year), writing Walden in 1854 (with its famous line about listening to a different drummer), was in Massachusetts, not here. What was here was a modest level of industrializations, and that included the Weeks Manufacturing Company. Only that came later than THE MYSTIGRAPH.

In fact, there wasn't much else around. In a town of about 2,500 there was a wagonmaker and a soap factory, plus a bunch of saloons (one called the Oyster). Then Charlie Weeks came along in the early 1900s. THE MYSTIGRAPH was one of his first machines, along with a pencil imprinting and vending machine that was very clever (but rarely seems to sell at latter day coin machine shows). Fortune tellers were just coming into their own when Weeks created THE MYSTIGRAPH, and he made it truly mysterious. Under the machine name it carries the copy "The Wonderful Fortune Teller," suggesting something different. It sure is. You put in a coin after you set the pointer "...to the question you desire answered" on the face of the machine, just like the Mills WIZARD. Then push down the crank. Lo and behold a subtle light shines onto a darkened window, and as if it rises out of a dark cloud the answer is revealed. It was fortune telling at its best. Also, like the WIZARD, there were a variety of replies for each question, adding to the spooky aspects of that lighted answer.

Except the machine is so plain and unadorned it isn't the kind of flashy fortune teller so desirable as a collectable to the mainstream. More than a few must have been made, for it was listed as a used machine in a sellout of fairly common arcade machines in a price list of an operator named Steffens, located in Oakland, California in February, 1930. So the machine obviously made it across the country in its days of glory. The front paper identifies the maker as "Mfgr., Chas. M. Weeks, Walden, N.Y., U.S.A.," and THE MYSTIGRAPH was still being made by Weeks when the firm was reorganized as the Weeks Manufacturing Company as indicated in that California price list. Incidentally, in 1930 the machine sold for $80 used.

Back to Weeks the man. He hung in at Walden, with his Charles M. Weeks Company producing an arcade strength tester called the CHAMPION MUSCLE DEVELOPER as late as 1917. His primary effort was in vending machines, however, with quite a number entering the market between 1906 and 1917. Some day the Weeks machines may turn out to be hot collectibles because of their unique characteristics, and when that happens let the record show that they were mentioned here first. You should know that THE MYSTIGRAPH seems to be the biggest thing he ever made. Was it his biggest success, or biggest flop? We don't know, so there's much to be learned here.

Roovers Brothers
AUTOMATIC ELECTRIC MACHINE
"Be Healthier" Pedestal Shocker Machine
1906-1913

Here's a happy machine that everybody seems to like. It has a good name — Roovers — and good graphics — that highlighted spiral to the heart in the center of the dial. Would you believe it, it's another shocker. Only with a difference.

At first thought it's strange to think that this machine would be a Roovers. The Roovers Brothers were noted for their automatons, and seemingly not much else. But they obviously had an active R&D program for this is a patented device. Then of course they had their name puncher and metal stamper and other things, quite a number that were patented but never seemed to make it to market. No so with the AUTOMATIC ELECTRIC MACHINE (Some sources say the name is BE HEALTHIER, but that's not true. That was just descriptive copy on the face of the machine). Brother Alfred W. Roovers applied for a patent on his "Coin-Controlled Electrical Apparatus" on October 1, 1906 (Patent No. 912,734, issued February 16, 1909), but that was already long after the horse was out of the barn. American patent law says that a new product that has been on the market for a year or longer is already in the public domain, and can't be patented. And Roovers had put this machine on the market the prior March, so the clock was ticking. On March 24, 1906 an announcement ad appeared in *The Billboard* saying "The Roovers AUTOMATIC ELECTRIC MACHINE. Novelty, durability, strength and appearance combines. The result of twenty years experience in the manufacture of high class automatic machines. Price $25.00." Followed up with a strange address: "Roovers Bros. 100 Schermerhorn St., Brooklyn, N.Y." The same ad ran in *The National Police Gazette* on March 31.



Mark Schlesinger Collection.

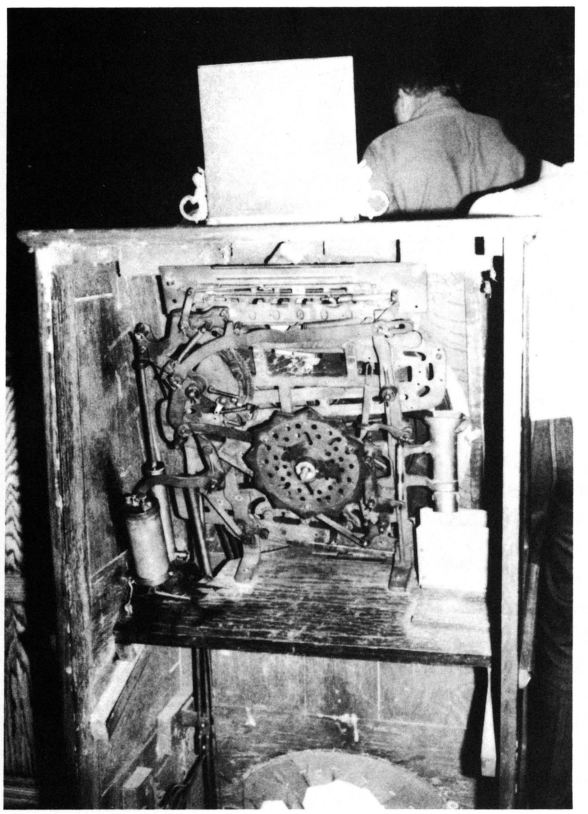
The trick of the machine is in the handles. They are coordinated, and so go down together. Which means you've got a great grip on them. And as you push down, and the current goes up, the redder the dial gets, showing blood flowing into the heart. The actuality of the case may have been just the opposite, but when you pressed down on those handles you knew you were in a no-gain-without-pain situation. The red line just got longer and longer with that simulated heart doing better by the moment. It's a neat, moving graphic that adds to the charm of a very charming machine.

Roovers sold direct, but the AUTOMATIC ELECTRIC MACHINE was also cataloged and sold by the White Vending Company of Chicago, so we've got some catalog copy to refer to: "The King of Automatic Machines. This machine will make money for you, pay for itself in a very short time and please your customers. One of our principle aims has been to make this machine give a smooth and even electric vibration, starting very mild so as not to jar the nerves. People who have tried it declare that it soothes and stimulates their nerves; they feel brighter after using the current (You bet! About 170 v!). Automatic time cut-off. Time about one-half minute. Price $30.00."

If anything, as attractive as it is, with the Roovers name, the AUTOMATIC ELECTRIC MACHINE or the BE HEALTHIER or whatever you call it, is a sleeper on the market. Wake up early and you'll have one at an affordable price.

Caille Brothers Company
WHEEL OF FATE "Gentlemen" Floor Fortune Teller
1907-1917





Elmer Cummings Collection.

For all of its intense involvement in arcade machines, The Caille Bros. Co. was really noted for one thing: automatic payout slot machines. Period, almost. The Caille floor machines (and later 3-reel Bell machines) were in a class by themselves. Durable, good looking, with high populations, they were regarded as the machines of choice second only to those made by the Mills Novelty Company, and for a few years in there it was iffy over who was first. Top of the line to Caille was their floor machines, or Automatic Color Wheels. They had grand names: DETROIT, PUCK, ELLIPSE, CENTAUR and others. They stood tall, had a colorful wheel on the top half of the cabinet with a selective (5-way, 6-way, 8-way) coin head so a player could pick the color or figure they were playing or, in effect, betting on. The reigning monarch in the field of slot machines for a decade between 1897 and 1907, and then in second place to the countertop 3-reel Bell machines but still significant for the next decade until America's entry into World War 1 in 1917, the floor machines were long regarded as the peak of coin machine technology.

Wouldn't be nice it they could transfer this technology to other lines? Mills did. They converted their CHICAGO upright to the CHICAGO FORTUNE in 1903, and then took an even bigger step in 1905 when they converted their best selling DEWEY to a single play fortune teller called the CONJURER. So it was Caille's turn. But rather than reach into their best seller line — the PUCK would have been the obvious choice — Caille did what they always did. They surprised people. Where most floor machines stood tall, Caille had acquired a cabinet idea from one of their satellite companies called Schiemer-Yates And Company, an outgrowth of the Caille-Schiemer Company which itself had led to The Caille Brothers Company. When Caille took over the Schiemer-Yates firm around 1906, they picked up a slant front cabinet idea which they played back to the market as the Caille VICTOR of 1907, produced in both "Plain" and "Musical" models. And, as we can see here, a fortune teller called the WHEEL OF FATE that came in both "Mens" and "Womans" models, "Plain" or "Musical," meaning 4 versions of the fortune teller alone.

Pardon me, they were called "Gentlemen" or "Ladies" models (but not by the operators). And they worked a lot differently than the gambling machine, even though they had the same mechanisms. Play is a penny (it was hard to ask a nickel for just an answer to a question) and the action is all in a little window at the top of the revolving color wheel, so you never saw how close you came to something else. Quoting the catalog copy: "Attractive and catchy Fortune Teller for Ladies or Gentlemen exclusively with handsome bevel cabinet of polished oak, nickel trimmings and ornamental glass dial. Revolving dial stops, exposing the fortune and showing photo of the future husband or wife. A time shut-off operated by an air pump controls this shutter allowing the fortune to be exposed as long as desired." The key point in the machine description is that "Rules of chance (which is why the VICTOR mechanism was used) select the destined fortune on these machines." The "Gentlemen" MUSICAL WHEEL OF FATE is shown. Only one, maybe two are known to date.

Caille Brothers Company
APOLLO Floor Athletic Machine
1907-1917

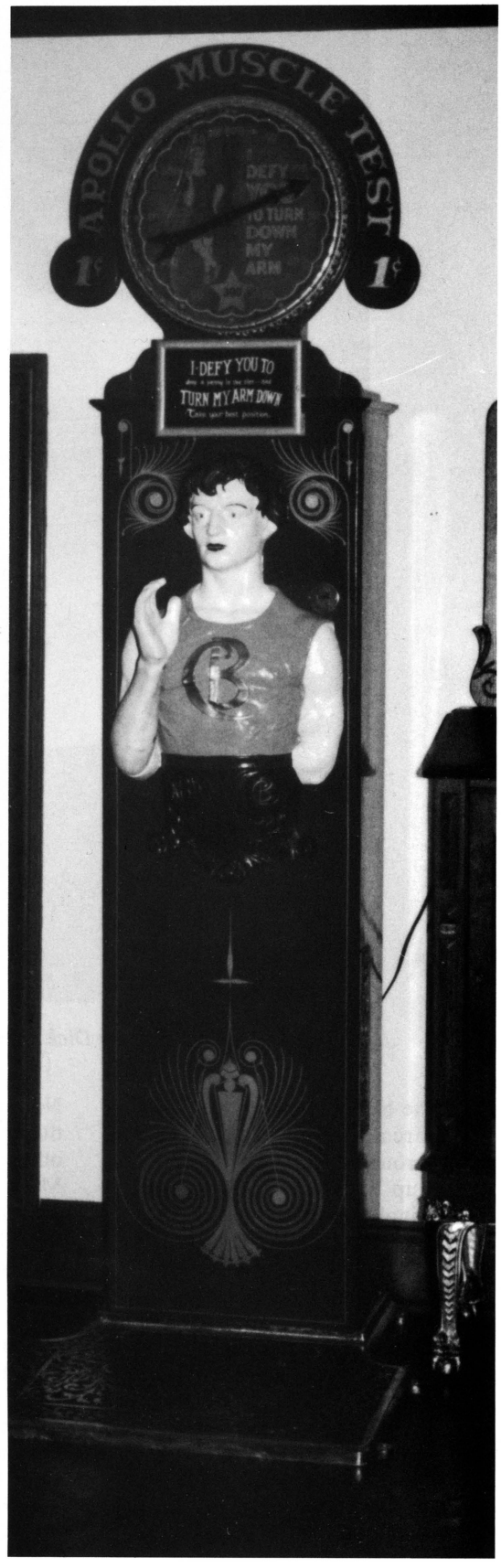
The bigger coin machine makers, most of whom made some form of arcade machine or another (or like Mills, Mutoscope, Rosenfield, Roovers and Caille, made a lot) usually had an in-house game or machine inventor and designer. When they didn't they hired them, or acquired machines from other line-reducing or sometimes defunct makers. But then there was the independent designer, the inventor and creator that didn't have the capital or the know-how to go into production. So they sold their ideas to the highest bidder, either on a buyout or on a royalty, making more or less either way depending on the sales success of the machine once it went to market.

Alcibiabe A. Brodeur of Worcester, Massachusetts, was such an independent designer. Idea directed, but not necessarily mechanically oriented, Brodeur came up with a devilishly simple strength tester based on the common barroom game of Indian Wrestling, a one-on-one grip-and-slam competition. So Brodeur figured out how this could be simulated in a machine. He got his Design Patent (DE 39,159, "Design for a casing for Muscle-Testing Machines, issued February 25, 1908) a shade under 2-1/2 months after he applied for it on December 14, 1907. Meantime, he had gone shopping (Nope! He went out selling!) and came up with a connection with The Caille Brothers Company in Detroit. The result, the APOLLO, is just about the largest strength tester ever made, and is certainly rated as one of the most — if not the most — desirable arcade machines to grace a world class collection.

APOLLO has had an interesting collecting history. It was the first arcade machine to top $10,000 when, in 1978, plastic surgeon and collector Larry Birnbaum of California bid $10,500 for his example. About 3 years later, one was found in a barn in Wisconsin"tossed in" on a deal already wrapped for some payout slots in the same barn. The machine is worth all this noise, and money, for it is "overpowering, a beautiful monster" in the words of collector (and APOLLO owner) Bob Legan of Ohio. Its makers, Caille, said it was "...the only muscle testing machine ever placed on the market. So popular has the APOLLO been that many of these machines are now in use in several foreign countries. One of the principal points in favor of the APOLLO is it massiveness. It gets the heaviest possible play wherever placed."

That original placement was important, too. The Caille recommendation: "This is a very large machine and although best suited for use in a penny arcade or amusement parlor still it is often introduced in saloons, bowling alleys, billiard halls and such places with astonishing results. Crowds of interested patrons hover around the machine trying to outclass their opponents in strength."

Scoring is neat, too. Caille again: "The life size iron figure of the athlete stands out from the cabinet with extended arm so that its hand can be grasped firmly. Can you twist it over? That's the point. In attempting it the player...may use one or two hands. A large arrow moves around the dial, indicating the strength of the player. A large electric bell rings at 300." Operators had their own nickname for the machine, as shown by used price lists. They called it the "Turn My Arm Down."



Bob Legan Collection.

American Novelty Company
SCULPTOSCOPE Counter Peep Show
1908-1924



Photo by Dick Bueschel.

The big machine makers' lock on arcade machines that started around 1901 or 1902 began to loosen up in 5 or 6 years as smaller (often single machine) makers entered an active market. The lonely and small volume coin machine selling of the 1880s and 1890s had disappeared as arcades opened up in the thousands around the country, creating a wide open new and replacement machine market.

Linchpin to the market was the peep show, the one machine everyone would operate (in another decade it would become the card vender, but that's coming up later) and pay to play. Not only that, the bigger machine producers often left the software up to other producers for a variety of reasons. Mills got slapped with a pornography judgement (and H. S. Mills even went to jail over it) and didn't want to be involved. Caille didn't want to be bothered. American Mutoscope and Biograph made their own (and always did, thereafter) but left room open for others. And Rosenfield took the same road as Mills and Caille. So there was a way in to the arcade field for photographers and producers who made the filmed features for the thousands of machines in use. Plus their own.

Not a lot of the film producers made their own machines. But among the picture producers, the American Novelty Company of Cincinnati, Ohio, was unique as a major viewer maker. It all went back to the period when William Kennedy Laurie Dickson of KINETOSCOPE fame was beginning to develop the MUTOSCOPE for his new partners. At the time a remarkably similar patent to the original MUTOSCOPE idea was issued to Frank S. Chance of Indianapolis, Indiana (Patent No. 591,452, "Picture Displaying Device," filed April 15, 1897, issued October 12, 1897). It worked differently, but the results were the same. The idea was picked up by (or sold to) Richard R. Whiting, also of Indianapolis, who was working on stereo viewers for home and business (Patents No. 580,024, April 6, 1897; No. 720,204, February 19, 1903 and No. 765,219, July 19, 1904), who the took all of this art with him to Cincinnati, Ohio. There (and moving to the suburb of Norwood), he created a stereo viewer and a "view-exhibition apparatus (Patents No. 826,635, July 24, 1906 and No. 963,841, July 12, 1910) which just as suddenly thrust him into the coin machine business.

It was that "view-exhibiting apparatus" that started things out. He applied for the patent on March 16, 1908, and about that time formed the American Novelty Company in Cincinnati to make it as the SCULPTOSCOPE. The early models had two viewers; one in front to look into and a second in back to catch the ambient light to illuminate the stereo cards. Later models opted for a flat lens on top per the photo, the same idea that was being used on the larger and competitive MUTOSCOPE before the latter was electrically lighted. American Novelty went on to make later models, covered by subsequent Whiting patents, making the firm and its SCULPTOSCOPE viewers one of the few major competitors to the MUTOSCOPE, Mills, Caille and other viewer makers. These machines are often misidentified as the name in the casting states it to be the "Whiting SCULPTOSCOPE" But Whiting is the inventor's name, not the maker.

Roovers Brothers

THE EDUCATED DONKEY Pedestal Fortune Teller

1910-1930

The Roovers boys must have loved politics, they stuck so close to it. PUSS IN BOOTS derived from a 17th Century tale about a marvelously accomplished cat that gained court favor, political power and a titled wife for its poor master, a miller. Their earlier AUTOMATIC ELEPHANT and AUTOMATIC DONKEY fortune tellers, made and marketed through Percy G. Williams in Brooklyn, corresponded to the symbolic figures for the Republican and Democratic political parties in the United States. True, MADAME ZITA, the earlier EDUCATED MONKEY and the later EDUCATED DOG didn't fit the mold, but enough homage had been paid to politics to suggest a themed dedication.

Only they never said it outright. When the figures first came out, mechanically, they didn't wear red, white and blue with stars on their costumes. Then, after the turn of the century, and the one-by-one electrification of their earlier automatons, the returned political figures still played it straight. Their adornments were so conservative it was difficult to make the political connection. It became, more than anything, a seemingly inside joke.

MADAME ZITA, the mechanical machine of 1895, was electrified first, becoming MLLE. ZITA, the "Electrical Zita," in 1904. Then, one at a time, the others came in for their 20th Century upgrading (except the EDUCATED MONKEY, which seemed to be stuck in time at the end of the 1880s and went no further) as a new generation of young adults were charmed by the boxed figures that acted so intelligently and told them what their future would be. When it was the turn of the EDUCATED DONKEY in 1910 the costume was changed, new fortunes took their place on the back wall, and the gut wenching handle was gone, replaced by inside electricity that made everything happen once the penny was pushed into the machine by the centerline coin slide.

And what happened was totally intriguing and a bit scary. The donkey turns his head, lifts the stick or pointer in his left hand, whacks the small free-spinning ship's wheel which rotates rapidly until it slows down and stops with the number shows at the top (of a total of 24 painted around the perimeter of the wheel) the indicator of your fortune. The back wall has all 24 fortunes printed in type, 12 on each side of the donkey figure. So you read what the number says. It's clever. It's animated. And it's cute.

It was also a crowd pleaser. First produced in 1892, electrified in 1910, it was completely re-done and returned to the market once again in the spring of 1930 in a new electrical model called THE DONKEY by the recently incorporated firm of Roovers Brothers, Inc. located at 3611 14th Avenue in Brooklyn. The firm had been completely reorganized after the Roovers Brothers sold out and subsequently died. It its forty year history of production between the Gay (or Naughty) Nineties and the Turbulent Thirties, THE EDUCATED DONKEY had shown up in three cabinet types (square, like this, plus a larger square similar to THE EDUCATED ELEPHANT, and in a curved cylindrical cabinet), had carried three producer's names (although the earlier machines were blank, making them difficult to identify. Only the Roovers Brothers, Inc. machines seem to carry a full nameplate) and had far longer active life than latter day collectors ever imagined.



Gil Shapiro, Urban Archeology.

Exhibit Supply Company
TRUE LOVE LETTER Counter Card Vender
1917-1927



Steve Reimer Collection.

The big turn in arcade machines came with World War 1. A dozen years of active life had used up most of the existing family audience. The population of the nation had been growing by leaps and bounds, only it was through Ellis Island and immigration. Few of the foreign borns could speak English, much less read or write the language, and didn't have the time or the money for such frivolities as penny arcades. The saloons were closing due to a wartime restriction on selling spirits (this early form of prohibition actually took place after the war ended but the law was the law. Full Prohibition followed a year later) and the arcade peep shows were turning lewd. No more bridges or World's Fairs for the coin-op viewers. Typical fare now was young women in various stages of undress, doing a lot of swirling. The arcade crowd had changed.

Part of that change was young singles, generally couples, entering a somewhat risky and sophisticated adult world through the still open doors of the arcades. In a quiet, conservative world the sayings and showings of the arcades were risque, and therefore titillating. The arcades became a great raunchy date. And a place you didn't tell your mom or your dad you went to. Except the cards (often cherished, and hidden. They show up in antique estate sales, stuck in book pages, or hidden in the bottoms of boxes) often gave you away. It was a whole hew phenomena, and one fostered by the newly formed Exhibit Supply Company of Chicago. First established in 1901 as a postcard printer, the firm didn't really start to grow until it was joined in 1907 by a printer's apprentice named J. (for John) Frank (for Franklin) Meyer who wanted to better himself. The infant company offered horoscope cards, letters for palmist machines, cupid letters, comic cards and all sorts of other paper pack for just about every card dispensing arcade machine made. The Exhibit Supply (and that's where the name came from) cards became the standard of the industry, virtually blotting out the other producers (including F. J. Howard of THE HANDSHAKE fame),

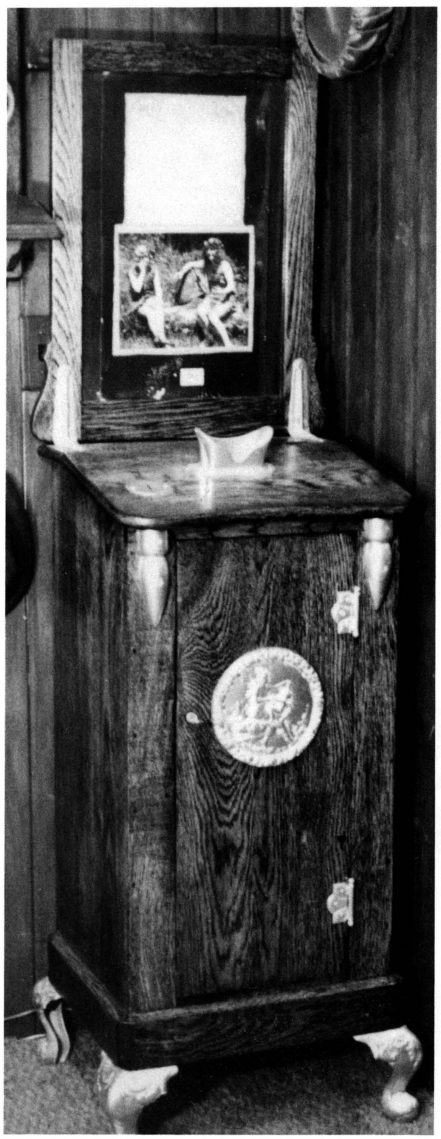
With their software product leading the industry, Meyer, now a partner, added hardware in 1914, a small card vender he called the MODEL A. The Model B and C floor and counter card venders came out in 1916. Then, the line leaders, the tall Model D floor machine that could be used on its stand, or with its top half sitting on a counter, and the smaller Model E counter machines, handsome wooden cabinets that could change their front printed panels (and inside card pack) to become anything, came out in 1917, just in time for America's soldiers and sailors and Marines, not to mention the new Signal Corps pilots, to take their girl friends into the socially off-limits arcades and get a racy card or two. Exhibit Supply Company single handedly (plus a little help from the war) made the card vender the financial backbone of any arcade.

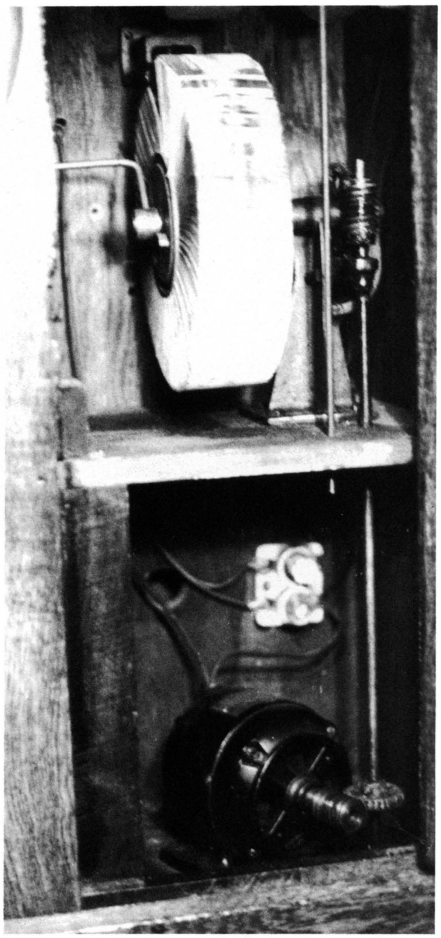
In their original form, the Model D and Model E card venders endured for a decade, changing only their front panels and card stocks. Of the dozens of possibilities (Poker Hands Fortunes, What Your Dreams Mean, Astrology, Palm Readers, Favorite Film Star and Movie Bathing Girls were but a few) TRUE LOVE LETTER, shown here in its Model D counter model off of its floor stand, was among the most popular. Looking inside, the cards are stacked for the "Female" (left) and "Male" (right) coin chutes and delivery slots.

Bennett Automatic Machine Company

PICTURE MACHINE "Wooden Mutoscope" Floor Peep Show

1920-1926





Richard Wiley Collection.

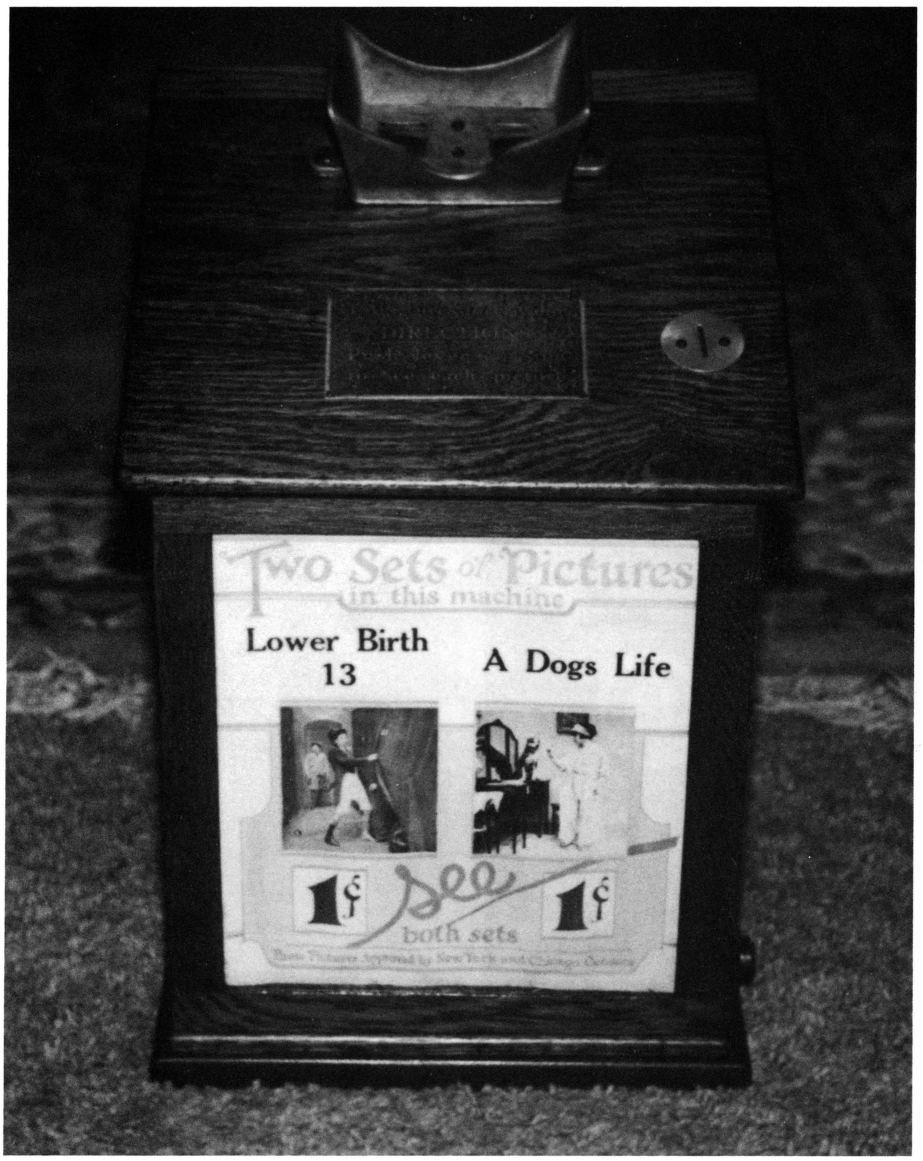
The rapid hold (stranglehold might be a better word) that J. Frank Meyer and his Exhibit Supply Company gained in the arcade machine market after World War 1 was nothing short of miraculous. From a card printer in 1914 to the largest producer of exclusive arcade products in 1924, a short ten years with a war in the middle, the Exhibit Supply Company carved out a niche that it enjoyed for a half century. The firm's name became synonymous with the industry. It never could have happened except for the vacuum that existed after the war. When it came to the machine makers, World War 1 was the Great Extinction. America's entry into the war in 1917 brought a corresponding curtailment of manufactured consumer goods in its wake. The many small companies that had scratched out a living on one or a few machines couldn't survive the hiatus and went belly up. Others, like The Caille Bros. Co., elected to get out of arcade machines ("Brother Art" died, and Adolph Caille never liked the machines, so they were out). And new postwar machine development centered on the payout slot. Prohibition had taken away the saloon, and the enormous potential for amusement and physical test machines. Mills Novelty Company remained in the field, but almost all of the rest of it was left to J. Frank Meyer to take over. And he knew just what to do.

One of the stepchildren of the postwar operating world was the peep show. The American Mutoscope And Biograph Company had stopped making MUTOSCOPES even before the war (they had made so many that the market was saturated) and Rosenfield had dropped out of the business to go into electrical home appliances (they were an early vacuum cleaner maker). So as the old machines wore out there were no new ones to take their place.

That's where George W. Bennett of Oak Park, Illinois, came into the picture. Never a great inventor but truly a clever innovator, Bennett took a look at the peep show market and came up with inexpensive replacements for the old equipment. In the case of the Bennett PICTURE MACHINE, also known as the "Wooden Mutoscope," George Bennett replaced the cumbersome and elaborate clockwork mechanism with a simple fractional h.p. electric motor. The coin entry was just as simple. The penny itself completes the machine circuit when it drops between two contact points. Then, at the end of the picture viewing cycle, the penny is pushed out and the motor stops.

Bennett didn't face patent problems — Mutoscope was out of business (to have its assets sold to a new investor to start up again in a year or so) and the bloom was off the arcade rose — so he had a free reign with his new viewers. His big customer was Exhibit Supply, with J. Frank Meyer financing his venture, enabling Bennett to establish his Bennett Automatic Machine Company in Chicago in 1920. The Bennett PICTURE MACHINE was plugged into service in the early 1920s, running the old MUTOSCOPE reels. Bennett must have had a sense of humor, for he often stuck Caille Bros. or Rosenfield front castings on his cabinets, totally confusing latter day collectors who didn't understand the machines. Bennett also made a continuous reel movie version to take the place of old KINETOSCOPE and other movie machines.

Exhibit Supply Company
DUOSCOPE Counter Peep Show
1922-1926



Jack Moneta Collection.

The peep show gap of the early 1920s was filled in a number of ways. With the old equipment worn out, and its makers gone to that big arcade in the sky, the old drop card pictures, stereos and continuous reel film shows were left high and dry at the very time that time and tide and changing fashions were calling for new programs. One would think that a lightly clad woman, or a nude, always looked the same. But that wasn't true. Changing hair styles and clothing dated the films, and new nudies were continuously needed to keep the images looking young. Otherwise you had vernal men looking at provocative poses by women from the same time frame as their mothers, and that was a pretty fast turnoff. So the pictures had to be fresh, and new equipment was needed to show them.

Exhibit Supply had an answer for that opportunity, too, and it was inexpensive. The solution came out of Exhibit's first ace salesman (and later number two man) in the company, Percy C. Smith, known to one and all as Perc. Born in 1877, by the time of World War 1 Perc was 40, had experience as a production manager (for a Chicago bicycle company), had sold arcade machines for the Mills Novelty Company and had joined J. Frank Meyer's Exhibit Supply Company. His invaluable experience in arcade operations, sales and manufacturing led his hand to product design, and resulted in the Exhibit Supply DUOSCOPE.

So the name implied, the counter-top machine showed two shows (sort of a half QUARTOSCOPE) of stereo views, 15 cards each, the by now established norm (set by the SAPHO years ago). Its mechanism is unbelievably simple. It is all mechanical with no lights or electricity. You put the coin in and push down a little lever on the side. It advances the ratchet arm one cog, like a gum ball machine. There is no clock or other mechanism, and once the 15 cards for a set are shown, it shuts down. It is totally trouble free. You, the player, are the motor and the only moving part. The whole thing is made up of only a couple of castings. The patent for the DUOSCOPE is a marvel as it shows all of this (Patent No. 1,556,043 issued Oct. 6, 1925, "Coin-Controlled Machine," filed June 2, 1922 by Percy C. Smith, of Chicago, Illinois, Assignor to John F. Meyer, of Chicago, Illinois).

The announcement advertising told how the machine worked, and where: "Smallest Drop Picture machine using our real photo views. Holds two sets of views — gets two coins from each player. Operates by thumb lever — no motor to wind or look after. Uses surrounding light. No electricity or wiring connections required. Can be changed from 5¢ play to 1¢ play, by removing one screw. Simple, positive mechanism fastened to cabinet door and very handy. Separate money box door equipped with high grade lock. Reel of pictures can be quickly changed from one machine to another. Display sign designed either to use in front or fitted to top of machine. When fitted with our wonderful art model or bathing girl pictures, the DUOSCOPE will get a nickel play in hundreds of suitable locations, or when fitted with out comedy views for kiddies the DUOSCOPE will get a penny play in school stores — everywhere you find the kids." A kiddie-comedy 1¢ version is shown in the picture.

Exhibit Supply Company
ORACLE Counter Fortune Teller
1922-1931

Once Perc Smith got rolling there was no stopping the man, and it went on that way for 30 years. He's next machine, coming on the heels of the DUOSCOPE, was a countertop fortune teller that set the pattern for a whole line of Exhibit Supply machines to follow.

There was no trick to a fortune teller. It was simply ask a question get an answer. The uncomplicated machines provided yes/no answers, the same for each question every time. The more sophisticated devices answered in sentences that weren't the same all the time. At the high end the truthful and intriguing added the element of chance to the answers (which is what made it possible to convert gambling machines to fortune tellers). Smith was looking for an inexpensive device that combined the cost factors and ease of production of the yes/no machines with the allure of the random choice chance answers. His ORACLE of 1922 — which was upgraded at least 3 times during its 20 year career — was the answer.

ORACLE is a yes/no with a difference. Its answers are chance, or seemingly so. Two small pivoted flags sit behind a top-of-the-front window, one yes, one no. Depending on the person, the time of day, the position of the planets or the hand of fate, the answer would be a yes, or a no. Actually, it was a lot less dependent upon the muses than that, for in the language of the patent on the machine, "In operation the customer selects a question on the face of the sheet and turns the knob until the pointer indicates that question. A coin is then inserted in the slot and depending upon the way it is held and the position it is held at the time the operator releases it, it will move through one or the other of the passages and operate the corresponding lever to answer the question in the affirmative or the negative. A coin inserted in the slot will necessarily throw its weight on one of the pins and raise the corresponding plate into position behind the window. In order to hold the intelligence device in position long enough to permit a customer to read the answer I provide each of the levers with a latch which will be engaged by a detent. This detent will hold the intelligence device in position behind the window until it is freed by the (next) coin." The patent is quite pictorial and would make a fine hanging behind the machine. Get Patent No. 1,556,042, "Coin Operated Machine," Patentee Percy C. Smith, of Chicago, Illinois, Assignor to John F. Meyer, of Chicago, Illinois, filed June 2, 1922 and issued on October 6, 1925.



Bill Whelan Collection.

All you had to do to keep the ORACLE fresh and responsive was remove the pointer set screw, and slide in a new piece of front paper with more modern questions. Everything else worked the same, so there was no mechanical work needed to upgrade. But physical upgrades also occurred. The original cabinet had the coin slot in its face, upper right. That was quickly changed to a cast coin slot on top of the cabinet as shown in the photo. Then large marquees were added, depending on the questions on the front of the ORACLE machine. The most popular was "YOUR FORTUNE" as shown here. Others were "YOUR PAST," "YOUR PRESENT" and "YOUR FUTURE." Exhibit Supply recommended that the machines be run in a bank of four to grab a lot of pennies per player.

Exhibit Supply Company

RADIO LOVE MESSAGE Counter Card Vender

1923-1931



Larry Birnbaum Collection.

John Franklin Meyer did some inventing, too. He was responsible for the Exhibit Supply card venders at the very beginning. Tall, short, countertop or floor, Meyer made a multitude of models. One of the most popular was the 2-slot IDEAL CARD VENDER countertop of 1921, allowing room to display actual samples of the 2 cards vended, or a price panel on the left with a typical vended card on the right. That was fine, but it didn't provide a lot of latitude for display.

Then Meyer hit on a brainstorm idea. Why not make the machine a specialty message display. With that the RADIO LOVE MESSAGE, a visual conversion of a simple 2-card vender, was created. Why radio? So many years after the fact it is difficult to conceive the impression the open airwaves made on an adventurous nation. Radio, the great communicator, was actually a spin-off technological benefit of World War 1. For a hundred years communications had been the newspaper joined by magazines, with people becoming aware of what went on in the world by reading about it. And one of the things they read about (science was a hot subject, and the *Scientific American* magazine, and the *Artisan*, were well read) was Guglielmo Marconi's wireless telegraphy transmitted by radio waves. The early developments in radio, transmitting sound, were American, led by Reginold Fessenden and then boosted by the development of the vacuum tube by Lee de Forest, with the latter putting on the first broadcast of music in 1910, airing Enrico Caruso from the Metropolitan Opera House in New York. His listeners were a few scattered amateur radio operators with homemade receivers. Then, when the Great War of 1914-1918 came along, radio research disappeared under a cloak of military secrecy. After the war a full flow radio industry burst upon the public scene. Newspapers carried columns about how to build radio receivers, crystal set kits were the rage, and the people in the industrialized world could finally hear history as it was happening.

In America, the major electric companies bought out the American Marconi Company, and formed RCA, the Radio Corporation of America. Kits, and commercially built radio sets, followed, with the public fitting headphones to their ears to hear the music and event shows being beamed their way by a growing number of radio stations in the early 1920s. It was the beginning of entertainment broadcasting, and converted home entertainment from player pianos, manual pick-up phonographs and stereo viewers to listening. It was the most exciting of the new marvels of the 20th Century. It was as significant an advance as television in the 1950s and VCR's in the eighties. It changed the way people spent their time, and literally educated (if only in pop culture) the masses.

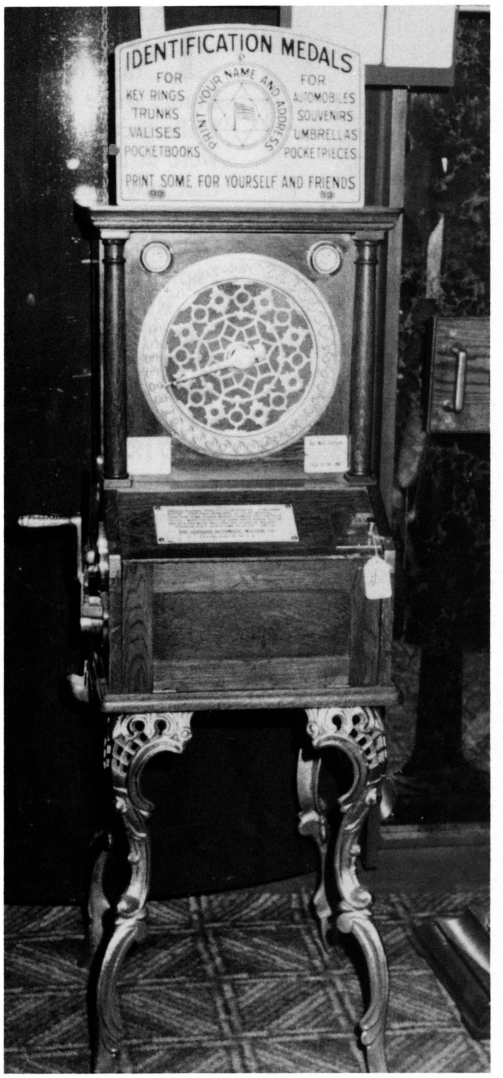
Exhibit Supply's RADIO LOVE MESSAGE played back this theme to the penny dropping public. A man and a woman are shown wearing headphones, with the copy "A message by radio...your message and photo are ready" under them. Two card columns, for men on the left, women on the right, dispensed the "messages" for a penny. RADIO LOVE MESSAGE was popular throughout the twenties and early thirties, and was still being sold on the used machine market in the 1950s. Sold in banks of two machines, they vended cards for both single and married men and women from 4 card chutes, 2 each.

Harvard Automatic Machine Company
METAL STAMPER Floor Stamper Machine
1923-1936

Here's a machine that has barely changed in over 60 years, except in its cabinet and base. But they had to change. Take one look at them. Those floor legs are the most elaborate stilts ever applied to any coin machine over the years, and are distinctively Harvard (they are known to collector Bob Legan as "garden furniture legs"). What did change was the cabinet box, with the 1960s models in a fully self-contained floor cabinet. But under the skin these machines are almost all alike, with the same heavy and complex cast iron mechanisms right down to the same part numbers from 1923 to the present era. Used machine price lists from the 1980s still list the Harvard (calling it the METAL TYPER) under the "Arcade" classification with values over $200. That has now changed, for the Harvard is one of the few machines still valuable on location that has a considerably higher value on the antique market. It is a living dinosaur.

The Harvard story started in Cleveland around 1895 after industrial time clock inventor George W. Heene and his brother John went into the manufacturing business together. The medal stamper class of machine was off and running with the Roovers NAME PLATE MACHINE, to be followed by the Mills Novelty Company EMBLEM EMBOSSING MACHINE, the more revolutionary Caille Bros. Co. ALUMINUM NAME PLATE and others, so by World War 1 it was a crowded art. But entrepreneur George Heene, who by then had bought out his brother John, thought he had an angle of his own. From the very beginning Heene had utilized an aluminum emblem in his MEDAL STAMPING MACHINE. First produced by Heene's Automatic Stamping Machine Company in Phoenix, Arizona, in the early 1900s, by the early 1920s Heene had moved his re-named business to Cleveland with a new version. It was to become the definitive model. The patent was issued on May 15, 1923. Collectors call this the "Ornate."

It took a long time to gain a foothold, but the unique circular disc of the Harvard METAL STAMPER ultimately became a favored pocket piece, attached to key chains, as a lucky coin, or handy for a myriad of other uses.



Bob Legan Collection.

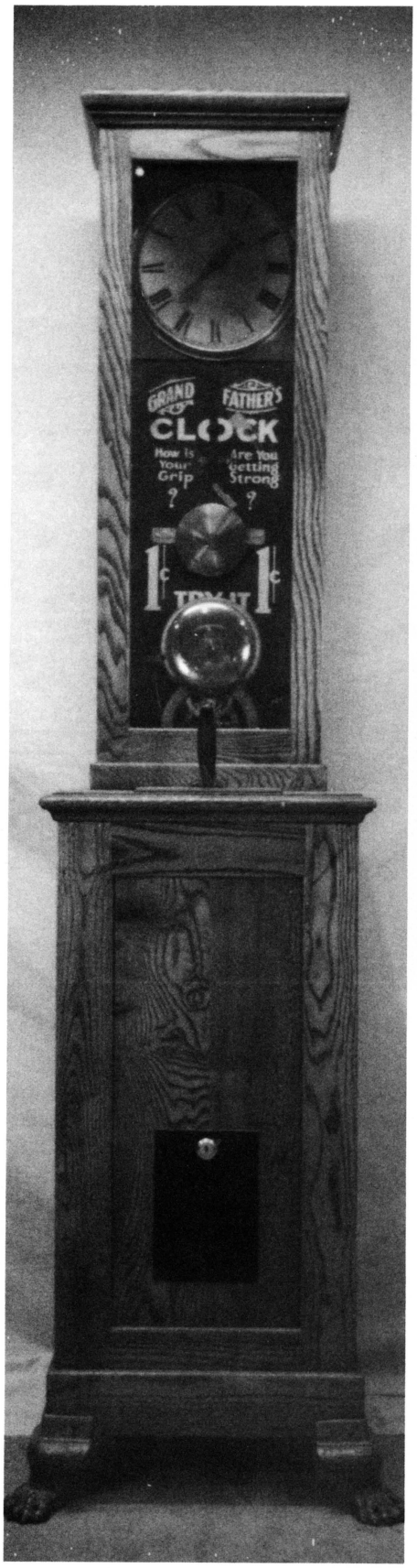
Once established, the uses were featured on a large top sign that reads: "Identification Medals. For key rings, trunks, valises, pocketbooks, for automobiles, souvenirs, umbrellas, pocket pieces. Print some for yourself and friends." All of this was capped off by the somewhat lengthy directions on the lower slanted panel, with the now familiar "The Harvard Automatic Machine Co., Cleveland O., U.S.A." And that was it. No dates of street names or addresses, and no connection to other major coin machine makers. It was as if the Harvard was full grown, bursting out of an egg, entering the coin machine scene as a mighty maverick of mysterious origins. It wasn't part of the mold, yet it held its own as a viable machine class, in the long run outlasting its opponents until it was virtually alone in its market niche.

One of the nice things about the Harvard METAL STAMPER is its husky "feel." You set up that pointer dial on any letter or number you want, one at a time, and actuate the stamper to emboss it on the aluminum disc. What a satisfying crunch, and all under your command. But you'd better space out your lettering and count the characters, for this is like setting up a line of type or editing on a computer. There's only so much space. Then signal the machine it's over and you get your disc in the cup on the side.

Gatter Novelty Company

GRANDFATHER'S CLOCK Floor Athletic Machine

1924-1927



The Exhibit Supply Company wasn't the only outfit making a race for arcade machine dominance once Caille dropped out and Mills greatly reduced their line. There were at least half a dozen other outfits that saw themselves as worthy of the crown. Among the cleverest was the Gatter Novelty Company located at 447 Poplar Street in Philadelphia.

Rudolph E. Gatter originally came from New York where, in the summer of 1902, he created and got a patent on his AUTOMATIC BOWLING ALLEY, his first coin-operated machine (Patent No. 718,338, "Coin-operated bowling game apparatus," Patentee Rudolph E. Gatter, of New York, N.Y., filed July 5, 1902 with patent issued January 13, 1903). Gatter was already a 10 year veteran in the operation and creation of coin machines, but Patent No. 718,338 really launched him on his way. He sold the production rights to The Caille Bros. Co. in Detroit who brought it out as their own CAILLE'S AUTOMATIC BOWLING ALLEY. In later years Gatter would bring the game out time and again as a Gatter product, and then as the products of a number of companies he was affiliated with over the years.

Flush with a few bucks and the achievement of his first patented coin machine, Gatter hied it back to Philadelphia where he had successfully operated machines, opening up his own shop as the Gatter Novelty Company, and settled back to create a string of machines that practically every arcade eventually had or every major arcade machine supplier either made under license, stole or distributed for Gatter. Rudolph gained recognition as one of the true pioneers of the industry, and a nonpareil producer of arcade type devices.

Among his more famous and widely copies machines was the GRANDFATHER'S CLOCK, a more elaborate and colorful version of his landmark STRIKING CLOCK machine, one of the key placements in any arcade in the twenties. GRANDFATHER'S CLOCK is in reality an elaborate grip test. Simply running a pointer around a dial was no longer enough for the playing crowd, because the crowd had changed. The old grip tests were primarily placed in saloons, and all they had to do was show one guy that he had a better grip than the other guy, with a round of drinks at stake. But in 1920, Prohibition became the law of the land, and gripping for booze went out of fashion. So Gatter made it a game instead of a test, ringing a bell and spinning pointers on a clock face as a reward for a good grip. And that brought it into the arcades.

The Gatter GRANDFATHER'S CLOCK was the end of one period in arcade machine design, and the beginning of another. It was the last in the line of old classic designs, with its form following its function. Few casting or trim elements were used, with the grip, bell, instructions and clock face constituting its basic design. Consequently, it quickly became dull. When Exhibit Supply took over on the machine they added a colorful smiling Grandfather casting to the top, giving the machine new life after its appearance revision in 1920. But this is the one that started the trend, and all but ended the arcade boxy look.

Bob McGrath, Jr. Collection.

Information Vending Machine Company
INFORMATION Counter Information Machine
1925-1931

They say that knowledge is power. Depending on how it's packaged, knowledge can also pull in the pennies. Here, in a nifty ice cream parlor machine, is proof. And it came out of the unlikely location of Des Moines, Iowa.

It all started with the mechanically inclined Gilbert brothers Marion L. and Roy, neither hardly hardened coin machine professionals. Marion started as a mechanic, later becoming a watchman and finally a motorman for the Des Moines City Railway. Roy was a brakeman for the street car line, and later a driver for Des Moines Ice & Fuel. Roy got the idea for their INFORMATION machine watching people put pennies in any and all trade stimulators and fortune tellers on his ice and fuel route stops. Their idea was to create a machine that taught people things, sticking mostly to the offbeat. In their patent they said "The information that may be compiled for our device is boundless. It may contain information similar to a city directory or it may contain national statistics of interest to the general public."

The way it works is the cabinet holds a wide roll of paper with a hundred questions and answers, with the questions exposed to view, 3 at a time, to the left. A shuttered window at the right center has the answer to the center line question, only it takes a penny to open the shade. So you turn the crank (later models had a knob) at the right side past all the questions until you see the one you want answered, center it, drop a penny, turn the shutter release, and there it is, what you've been waiting for. The answer! To what? Well, the questions are very typical, and are on the order of a vast fund of useless but interesting information. The questions changed from roll to roll, and the rolls were changed weekly in a hot location to keep the machine informative.

What kind of questions, you may ask? Here are some from a variety of rolls:

- What is the name, age and address of the youngest mother on record?
- How many people in the U. S. carry over one million life insurance?
- How many murders were committed in Chicago last (whatever year it was) year?
- What is the assessed valuation of New York City?
- What is love?
- Is there a premium on indian head pennies?
- What is the difference between an Old Maid and a bachelor girl?
- What president of the United States is supposed to be the father of an illegitimate child?
- How much liquor does the average Chicago Speakeasy sell each week?
- How fast can Floyd Gibbons (a current radio reported and news man) talk?
- How many illegitimate children were left behind by the Allied armies when they finally moved out of Germany?

Stuff like that. Trashy and raunchy. People loved it. And new rolls, only 50¢ per change to the operator, kept the machines viable. They also had special rolls for pool halls, drug stores and other locations. The early marquee, as shown, says "Information? 1¢. Patent No. 1,585,342. Ask Me — I Tell 'Em." Later marquees for the 1931 model were simpler, but still carried the name INFORMATION and the patent number.



Larry Birnbaum Collection.

Globe Amusement Machine Company
LIGHT HOUSE GRIP TEST Floor Athletic Machine
1926-1927



Here's another one of those off-brand but significant arcade machine makers like the Gatter Novelty Company that produced devices that were copied and marketed by others. Promoting itself as the "Largest Manufacturers of Meritorious Coin Operated Machines in the East," the Globe Amusement Machine Company was located in that Motherland of all arcade coin machines: Brooklyn, New York.

Globe Amusement carried on the tradition of the long gone Brooklyn machine makers, such as Automatic Battery Company, National Automatic Machine Company, Percy G. Williams and others. The Globe group may well have come out of these early pioneer makers, for it was if the firm burst onto the twenties scene full bloom as an experienced machine producer with a full line of arcade machines that had a big maker, full line appeal. Possibly their most popular machine, based on the number of surviving examples, is the LIGHT HOUSE GRIP TEST, a traditional style arcade machine that was put on the market in the middle 1920s. In its introductory advertising in February 1926, Globe Amusement called their device "The only athletic coin operating machine that is patronized by women and children. The machine that has proven to its purchasers to repay its cost in 3 weeks."

If the ladies and the kids played the LIGHT HOUSE GRIP TEST (which sounds a bit like a stretch) is was because of its unique scoring features, very rewarding in their way. Globes' description explains its charms; "The lighthouse stands 42 inches above the base or machine proper and is finished in beautiful imitation granite blocks, presenting the appearance of a real lighthouse. The door, 8 windows and dome of the lighthouse light up in succession as pressure is exerted on the handles, each one registering a pressure of 100 lbs., reaching a total of 2,000 lbs. pressure (Note: A lot of women and children can squeeze that off). In the door and each window there are, besides the numbers registering the pressure, some different snappy and tantalizing sayings, which urge the player to try again and again for better results (Note: Imagine the kids reacting to those "snappy" sayings). When the player reaches the 1,000 mark, the dome lights up, and simultaneously with that a siren whistle goes off, which makes a strong ballyhoo, drawing attention to the machine (Note: And just how many women and children would like that?)."

That's the soft description, but in real world terms, as that light inched up the LIGHT HOUSE GRIP TEST the tension built up as you weren't completely sure where that siren kicked in. Except siren isn't a good word to describe that sound, for it was a lot more like a fog horn. As the lights climbed, so did anticipation. And suddenly, there it was — Aaaaooooghaaa — the same piercing sound that was used on a Model T Ford car that cleared the streets as it came bounding down the road. It was the sound of the times, and in a closed room or arcade it boomed beyond comprehension. All the while the dome light flipped on, the full tower was a blaze of light, and nobody within half a block could miss the thing. How many women and children do you think that attracted?

Globe didn't survive the Great Depression, and Exhibit Supply picked up the machine. But it never had the fancy trim, panels or castings of the Globe original, which is one of a kind.

Marvin Yogoda Collection.

Globe Amusement Machine Company
RAISE THE DEVIL Floor Athletic Machine
1926-1927

The Globe Amusement machines had a lot of variety and built-in arcade life, for the results were never the same. Yet many were variations of the same theme as most were athletic machines. For instance, where the LIGHT HOUSE GRIP TEST was a conventional gripper with unconventional displays, the Globe Amusement RAISE THE DEVIL was a strength test in the traditional sense. It has the same grip handles that the Rosenfield grippers had years before, and was almost a re-do of the Caille Bros. Co. TUG-OF-WAR, right down (or better yet, up) to the red devil's head. Only the strength test was different. The Caille was a combination grip and pull test with a rope. The Globe Amusement version had pull grips you squeezed together with both hands, making a red devil rise higher the harder you squeezed.

The whole idea, as the machine marquee said, was to RAISE THE DEVIL and "Make him squeal!" To accomplish this the vertical scale was ticked out in important steps along the way. Initial squeezes got you to "10,000 ft."; more to "30,000 ft." Then much more superhuman efforts got you to "Outer Space," "Near Heaven," and finally "Heaven." And that's where the devil squealed! The whole idea was to "Raise the devil out of hell."

These were very popular machines (they were still selling used in 1945 for $150, twenty years after they were introduced). Part of the reason was the Globe Amusement construction, along conventional arcade machines lines, with a common base for most of the athletic test machines. It came in for its own catalog description to tell the operator what to expect: "These grip test machines in all stand 7 feet high, taking up no more than 16 inches of floor space each, and are constructed of the very best and most durable material throughout. The cabinets are built of well seasoned oak, all paneled, and highly finished in natural wood. All parts, and cash box, the latter secured by Yale lock, are accessible from the front."

In its short time at bat, the Globe Amusement Machine Company made a long term mark on the arcade machine. The machines looked fairly modern for their day (except for their old-fashioned looking cast iron legs, the same one used on slot machines since the early 1900s, mostly because they worked very well and were cheap) and survived for years being made by other manufacturers once their Globe Amusement days were over. The RAISE THE DEVIL, for instance, was picked up by the reorganized and reformed International Mutoscope Reel Company Inc. in the early 1930s, giving it a new lease on life. It is sometimes difficult to tell the machines apart, although the cast iron legs give the original away. Except it rarely has its original maker's name on it. The most obvious location for the manufacturer's name is on Globe's universal front nameplate casting, but that is sometimes (oftentimes, actually, as it didn't add to machine performance but it did add to its weight) missing. The panel lists the Globe Amusement Machine Company name and address which, for the record is 93 Grand Street in Brooklyn. It makes you wonder, is the building still there, and are there parts in the basement?

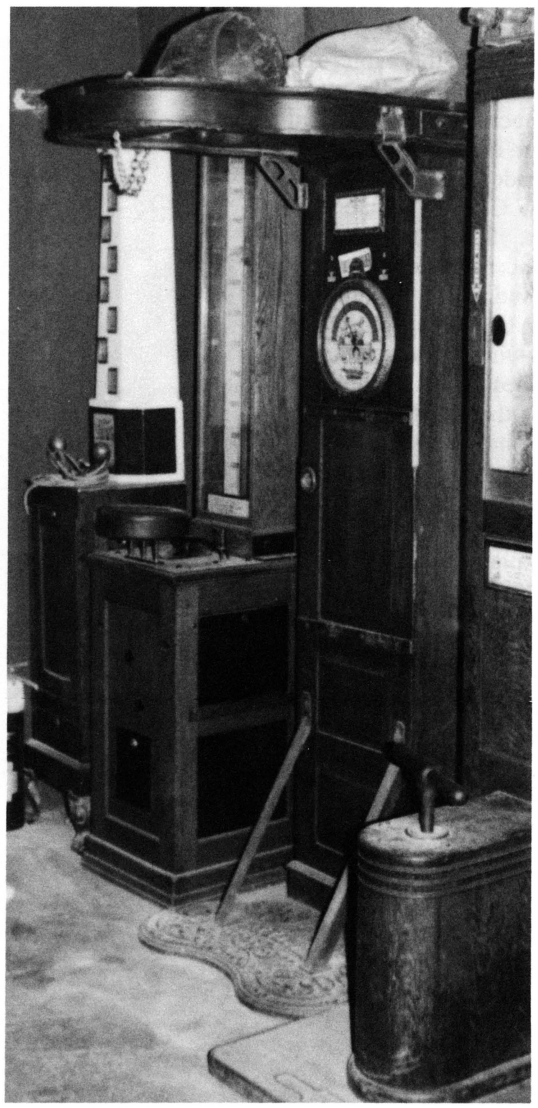


Mark Schlesinger Collection.

Mills Novelty Company

1926 BAG PUNCHER Floor Athletic Machine

1926-1930



Roger Simale Collection.

Old Mills Novelty arcade machines didn't just fade away. They went away to yet come back another day. Well, some of them, anyway. From the longest line in the industry in the early 1900s, to a short line in 1926, Mills Novelty Company still held a commanding position in arcade machines.

Why 1926? It probably had something to do with the cost of machine production. The older arcade machines were available from inventory for years, with little or no Mills investment left in them. But day by day, year by year, as they were sold, the cost of reproduction exceeded the value of the machine until it was uneconomical to make and sell the device. Thus the year of the big change, 1926. About a dozen arcade machines and trade stimulators were selected for upgrading — it was actually downgrading, for they were made less expensively and put in cheaper cabinets — to remain in the line while all of the others were discontinued. It was revise or die.

The largest machine to survive the year of the great conversion was the Mills Novelty BAG PUNCHER of 1903, only now it was called the 1926 BAG PUNCHER. Originally conceived in the summer of 1903 by Herbert S. Mills (Patent No. 740,160, "Coin-Controlled Punching Bag Apparatus," Patentee Herbert S. Mills, of Chicago, Illinois, application filed July 31, 1903 with patent issued on September 29, 1903, a very large and complete mechanical patent), the BAG PUNCHER became a mainstay machine in the saloon and early arcade locations of the first decade of the New Century. Big, costly and impressive, they were everywhere. You put in your coin, pull the bag down on its chain, and punch for score. Only a lot of times the puncher hit the cast iron protector around the top of the bag and crunch, another broken hand or wrist. It happened so often something had to be done about it.

The redesigned, simplified and less expensive 1926 cabinet did that something. The lighter cabinet used cheaper woods, the turned base supports became plain milled wood, and the bag protector was either greatly reduced or completely disappeared depending on the model. The sting was out of the old penny puncher. It was still sold as a macho blow tester, but now it was called a machine that "...attracts young men, makes 100% profit." The new literature called it "...a machine for testing the force of a blow. Of course, every man thinks he possesses a mighty wallop so considerable rivalry will exist wherever a Mills (1926) BAG PUNCHER is installed. By inserting a penny, the bag may be pulled down. The bag is then struck and hits the platform above. The force of the blow is registered on the large dial. The bag immediately locks and cannot be pulled down again until another coin is deposited. A bell rings when 900 lbs. or over is registered. The operator installs the (1926) BAG PUNCHER without charge to the merchant and in exchange for the location the merchant receives 25% of the money taken in."

Oh yeah? The 75/25 split soon disappeared for a 50/50, or worse. And some locations wanted an even greater take, an accommodation provided by Mills in a reward paying puncher that played on a nickel. Rewards for certain punches were listed and paid by the location. But for that model the large cast iron bag protector was put back on to scare the puncher. So much for consumer safety.

Mills Novelty Company

1926 LARGE ELECTRIC SHOCK Floor Shocker Machine

1926-1930

That big Mills Novelty cattle call and model cutting of 1926 reviewed everything in the lines, and chopped anything that didn't sell well. Only the proven pullers survived, to be put through the cost effectiveness process. While the basic operation of the machine didn't change, the survivors were somehow lesser machines. The 1926 LARGE ELECTRIC SHOCK MACHINE is typical. When it first came out in the early 1900s it was in an elegant curved wood cabinet (called the "bow front" model) with a lot of detail and castings. The machine almost looked like a serious scientific experiment.

But when the 1926 LARGE ELECTRIC SHOCK machine model came along a lot of that was changed. The cabinet lost its curved lines when the bow was replaced by straight slab sides and front (to become the "straight front" model) although the insides retained the pseudo-medicinal approach of a classic shocker, making it look like a packaged doctor's office. It was still the top of the line as far as shockers go, but not fully the cabinetry art of the earlier model.

From a collecting point of view there is little difference between the two, for the Mills machines are big, bountiful and colorful, no matter from the teens or twenties. The 1920s model still has that magnificent "Electricity Is Life" figure framed dial at the top, and a nifty plaque inside that describes "Electricity" as the "Silent Physician." The catalog copy sold it the same way it had been sold years before, saying, "It is a known fact that electricity is good for the nervous system (Note: How's that for medical selling? Say that today and Food And Drug will have you in court in a minute!). Owners of our LARGE ELECTRIC SHOCK machine tell us that many of their customers came in every day to take a treatment (Note: Sounds like they were shock junkies, and no way was it good for the heart). Besides the curing powers of this big machine, it is a big attraction as an amusement machine. It can be used for nickels or pennies — a device throws out the penny when it is set for nickels. The shock is given through he handles and gradually becomes stronger as the handles are pulled farther apart. A clock arrangement shuts off the current after a certain interval. Works with four dry batteries or can be attached direct to house current. Machine is 78 inches high, 20 inches wide, and 25 inches deep. Price $135.00.



Bob McGrath, Jr. Collection.

Then an even bigger change came along. The Roaring Twenties were personified by big bucks, fast cars, speakeasies and sports, independent women and a zest for life. So Mills Novelty adapted to the times. Gone was the whole medical idea, with the 1926 LARGE ELECTRIC SHOCK machine sporting fast living and flapper graphics on its later models. This is a tremendous period piece, particularly for the health and fitness nuts of our present era. The whole idea of the "Silent Physician" was abandoned, to be replaced by inside graphics that now said "Electricity Pep and Life, for that Run Down Feeling." It captured a whole new crowd, and reflected their life on the enormous back dial. In place of the Edwardian graphics of the earlier models the new version has a tin lithographed dial showing a flapper and a race car, with physically active lifestyle illustrations around the much smaller pointer face. To add to the color the cabinet was painted, usually green. So there's a lot to choose from in the big Mills shocker.

A.B.T. Manufacturing Company
TARGET SKILL Counter Target Game
1926-1930



Ed Smith Collection.

Coin machine history is often landmark history. Things go along just fine for a while, and then along comes a landmark machine that changes everything forever, and the evolutionary machine process starts all over again.

The A.B.T. TARGET SKILL is such a machine. When it burst upon the scene it revolutionized arcade machine design, and hung on. The very same machine is still being sold as a new machine to this day in a different guise, and probably will be for another quarter century or more, so powerful is a good idea. Yet it wasn't a new idea. The original countertop gun game was British, then German. Similar models were made by coin machine pioneer Gustave F. W. Schultze in Oakland, California, years before Walter S. Tratsch of A. B. T. in Chicago, put his salesmanship and productive capacity behind this machine. But when Tratsch did it, it was a machine whose time had come. So it was a runaway success.

The model shown is somewhat down the line, with the full history of this machine to be explained in later volumes of this series. Quickly, when Walter Tratsch and Archie Bechtol (an old coin machine hand, who operated machines at the St. Louis World's Fair in 1904) teamed up with Gus Adler in Memphis, Tennessee, in 1920 to form an operating company that ranged all over the south, they took the initials of their last names to create the A. B. T. Manufacturing Company. Only they didn't make anything yet. Bechtol had been fiddling with the German Automates Electra GmbH 1905 ELECTRA gun game as an idea, so he made a few breakthrough changes, made a gun shooter that ultimately looked like the German World War 1 Luger (the favorite military souvenir of the returning A. E. F. forces form France and occupied Germany) and, with Walter, applied for a patent on November 12, 1921. And they got it! (Patent No. 1,523,732, "Amusement Device," Patentees Walter A. Tratsch and Archie H. Bechtol, of Memphis, Tennessee, filed November 12, 1921 with patent issued January 20, 1925). They made them in a small shop for their own routes, and kept improving the gun. They added a swivel in 1922 (Patent No. 1,454,947), with Tratsch moving the production to Chicago around 1923 (while Archie stayed in Memphis). Late in 1923, working from separate cities, they created the unique scoring target of the game (Patent No. 1,482,725) and the commercial A.B.T. TARGET SKILL was born. It was Tratsch that added the finalized Luger look (Patent No. 1,551,858) and put the game on the open market.

Up to that time no arcade machine made had created such an introductory splash, and few have since. It was an instant and enormous success, almost as if it had hit the scene overnight. But that was hardly the case, and Tratsch wisely splattered the four issued patent numbers and their dates all over the back of his 1926 model, shown here. This is the wooden cabinet model with its Luger gun and aluminum marquee sporting its own logo and patent listings. The introductory advertising was simple: "Shoots 5 steel balls for 1¢. The only absolutely legitimate machine that gets the money. Can be operated anywhere." It was sold anywhere, too. A.B.T. made TARGET SKILL under private label for a number of coin machine manufacturers and marketing organizations, so it looked like they all made the game. But they didn't. It was A.B.T., and remained A.B.T. until the 1950s.

International Mutoscope Reel Company

ALL STEEL MUTOSCOPE Pedestal Peep Show

1926-1929

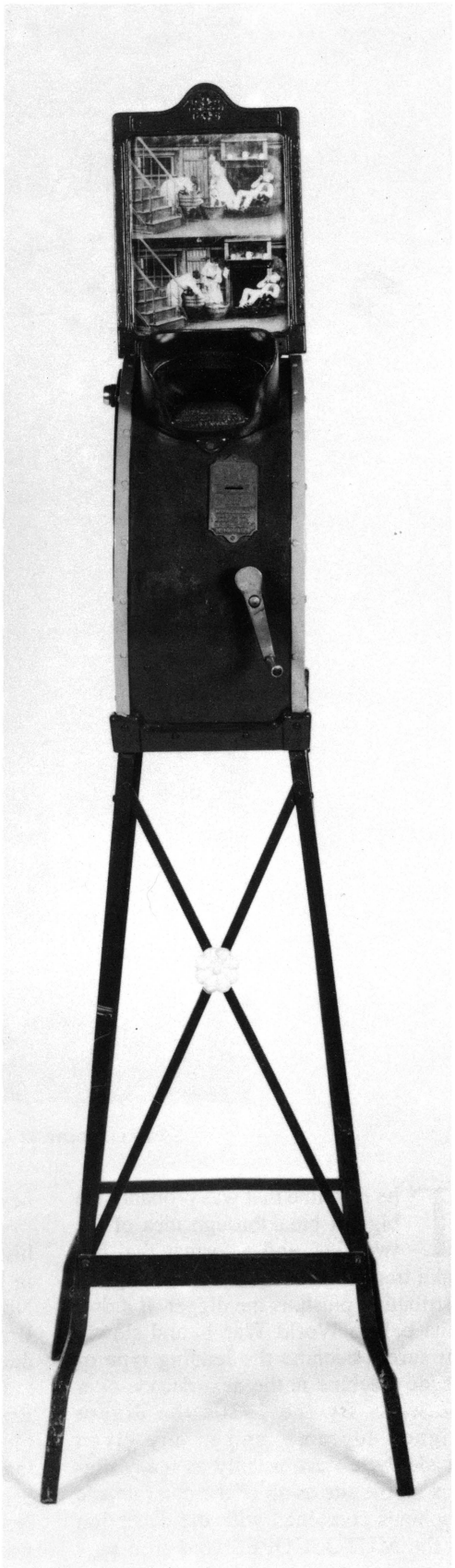
Changes in machines weren't the only major changes in the twenties. Changes in manufacturers came, too, and in the arcade field the biggest change was in the resurgence of the Mutoscope name, only it got a lot longer. Not only that, it had little or no connection to the original American Mutoscope And Biograph Company other than a number of shared used machines. It was a new entity run by new people, and in the beginning they weren't even coin machine people. The only thing that really stayed the same was their location: New York City.

Going back in time, when the MUTOSCOPE machine had saturated the market (and after a bad production run of the MODEL E "Eagle") the American Mutoscope And Biograph Company dropped out of the manufacturing and leasing business. In 1909 it got out of the coin machine business altogether to become the American Biograph Company, a movie producer. That left the old Mutoscope outfit high and dry, with a warehouse full of old machines and castings, not to mention rapidly outdating film reels. And there it sat for years, while the old machines continued to grind away, making money for their operators (many who kept the machines that were originally leased to them). So, in spite of the fact the parent company was out of business, the MUTOSCOPE continued on, and even began to grow in popularity. It was a growing monster without a head.

That's when New Yorker Bill Rabkin came along. His business partner, who had a brother who ran a penny arcade, learned the rights to American Mutoscope (and all those castings) could be picked up on the cheap. So they went for it. When Rabkin took a look at what he had, and gained enough pulse of the market to know he could sell MUTOSCOPE machines and new reels, he put his mind to solving the problem. First, he changed the company name to the International Mutoscope Reel Company and moved everything to West 23rd Street.

Then the big move. He created a new sheet steel cabinet on iron legs with only a few castings — the eye viewer for one — and stuck the old mechanisms in them, introducing the device as the "Latest up-to-date MUTOSCOPE" in March 1923. The introductory ad announced that "Our latest model MUTOSCOPE is constructed of plate and angle iron. Will last a lifetime." Only the inside parts didn't. So Rabkin made further improvements. As he ran out of parts he made new ones, only better, or at least cheaper. The old unreliable brass worm drives were replaced with new die-cast gears and worm sets to create the ALL STEEL MUTOSCOPE of 1926.

In the meantime Rabkin gained complete control of the company when he bought out his partner, and incorporated the firm. While other arcade machines were added, the ALL STEEL MUTOSCOPE was the flagship product as it continually sold upgraded movie reels. Ads for the machine said "Each Mutoscope (is) a complete miniature movie house. The latest improved models are light weight, all metal and very attractive (except they weren't!). Price complete with new reel, large metal frame and colorful display sign, $60.00. Counter size Mutoscope without stand, only $50.00." And the firm prospered.



Gil Shapiro, Urban Archeology.

Norwat Amusement Devices
STEAM SHOVEL Floor Digger Machine
1926-1931



Steve Gronowski Collection.

The machine that was probably the biggest breakthrough idea of the twenties, and a format that has had a tremendous rebirth in recent years distributing plush, is the digger. It didn't exist before World War 1, and slowly but surely became the leading type of arcade machine in the next decade after the war. By the 1930s the digger reigned supreme, and in any given arcade there were usually as many diggers on the site as all of the other arcade machines combined with the exception of the MUTOSCOPES (old iron plus newer steel).

Diggers have a long and convoluted history which will be covered editorially in later volumes, but suffice to say the Norwat Amusement Devices firm of Brooklyn, New York, was an early producer. Maker Alfred Norwat, who had a machine shop on Myrtle Street in Brooklyn, first teamed up with Charles Fleisher who had created the device during the war, making Brooklyn the first center of digger production. In 1924 Norwat went off on his own. The Norwat addition to the art was high visibility. The entire mechanism of the "Miniature Steam Shovel" was open and visible through the glass sides of the cabinet, so you could see all the gears working and the chains pulling (much like the first THE LOCOMOTIVE arcade machine of 40 years earlier) once a coin was dropped and the machine operation began. A large marquee on the top says: "1¢ Miniature STEAM SHOVEL 1¢. See it in action." There was even a touch of art on the inside, with a small panel of leaded glass used on the roof of the miniature steam shovel cab.

As it was early in the game, the trade press touted the machine at the time of its introduction at Chicago's February 1926 coin machine show at the Great Northern Hotel. The press said, "The Miniature Steam Shovel is a duplicate of the real thing, operating on the same principle, picking up candies and novelties. The operator regulates the position at which the bucket drops by a handle protruding from the aluminum front plate. Rainbow nuts are mostly used, with a sprinkling of slum for attraction. The operating cost is about 10 per cent. It absolutely does not conflict with any machine on the market, thereby getting the money that otherwise would be lost to you. Young and old play this machine repeatedly."

In citing its record for performance, the introductory story adds; "It is claimed by all owners to be the biggest money-maker on the market. Proof of the above is that every arcade in New York and Brooklyn and surrounding beaches have one or more machines. These men certainly know what they are doing as they all have large rents to pay and therefore must get the best money-making machines possible. An arcade proprietor at Midland Beach, Long Island, paid his rent the past two seasons from it."

The Norwat STEAM SHOVEL was only the first shoreline ruffling of a tidal wave to come. Before the decade was out half a dozen makers were producing diggers, and two makers — Exhibit Supply and International Mutoscope — were fighting tooth and nail (Mills Novelty was in there too, but weren't significant) for industry dominance, which they shared.

Exhibit Supply Company
HOROSCOPE Floor Fortune Teller
1927-1932

Sure, it looks like something out of the past, but when the penny was played and the card came out there was no question that this was the machine of the future. It was also one of the most fruitful cash cows Exhibit Supply Company ever created. For with all of this machinery, its large size, 3-dimensional display at the top and card facings over each coin slide this is nothing more (and certainly nothing less) than a card vender. In fact, if you take a good look at the picture and assume each display panel over two coin slides to be a separate machine, you'll suddenly see this device for what it is, and that's 6 IDEAL CARD VENDER machines banked in two rows, with a base below and display panel on top. And there you have it, a literal wall of card vending.

The Exhibit Supply Company 12-slot card venders were a gold mine. All they did was sell paper at high prices, and titillate the buyers. The first of them were two feature theme machines called WHOM SHALL I MARRY and ASTROLOGY, coming out at the end of 1924. The big feature was the display on top, literally a small stage where dolls adopted the roles of the players. The idea worked, for people related to the figures and the pennies rolled in. The reason for the popularity is understandable, for there were 12 questions that could be answered, at a card (and therefore a penny) apiece. The idea was so good, Exhibit Supply came out with 3 more machines in 1927, including HOROSCOPE, HAIR FORTUNE TELLING MACHINE and EYES FORTUNE TELLING MACHINE, so when all 5 machines were lined up, there were 60 coin slots and cards ready to explain the present and future to the gullible. Except these machines were also a lot of fun. The detailed analysis of human features and future mates were sure to bring a giggle if not a loud guffaw from the card buyers.

The HOROSCOPE was the most modest of the group, often playing it straight with horoscope cards, offering "A complete Horoscope Reading." That's what the cards did, and at a real profit. Card orders cost $2.50 per thousand, so the investment was only 25% of the return. Better yet, when you ordered the machine at $175, you got 18,000 cards that sold to patrons for $180, which in effect paid for the machine.



Steve Gronowski Collection.

Here's the way it works: "A large handsome machine...mounted on four ornamental, nickel-plated legs. The attractive display top portion portrays an oriental scene with richly-colored mystic figures in the foreground, illuminated with electric light. The machine has 12 slots — one slot for each month in the year. Over each slot is an instruction card giving the month of the year and directions telling the player how to obtain his horoscope. There are four different complete and interesting Horoscope reading for each month; one card for each week. Players who want precise readings will draw cards until they get the one covering the week of their date of birth. This results in a greatly increased sale of cards."

In later 1928, all the 12-slot card venders were upgraded to steel compartments for ease of vending, with a large paper mache display top added. It could also be retrofitted to older models in use.

Exhibit Supply Company
HINDOO Counter Fortune Teller
1927-1930



Larry Birnbaum Collection.

Okay, 12 months for a fortune, and 4 per month to pin down your date of birth, means that the Exhibit Supply HOROSCOPE on the previous page offered 48 options. Yet here is a small countertop fortune teller that offered 96, or exactly twice as many, in one-tenth the machine based on weight (125 pounds for the HOROSCOPE and 13 pounds for HINDOO).

That was the secret of Exhibit Supply. By sheer force of machine models, they covered every base, and then recovered then all again another time or two. So no matter what an arcade operator or arcade type location wanted, Exhibit Supply had a machine to meet the need. Or a couple. Some of them were ingeniously clever, like HINDOO. As we said in the past, the utilization of chance techniques in fortune tellers added spice and a feeling of fate to the fortune. And with HINDOO you set up the situation two ways to allow chance techniques to take over.

You start at the top, setting the pointer to one of 4 questions: (1) Will my wish come true?, (2) Is my future bright?, (3) Will I become rich?, and (4) Will I have a large family? Set up number one! Then you further qualify the answer by putting your penny in the proper slot: (1) Jan-Feb-Mar, (2) Apr-May-June, (3) July-Aug-Sept and (4) Oct-Nov-Dec based on the month of your birth. Set up number two! Then number three, but that one's out of your hands. The coin bounces downward, over cast pins to stop in one of the six information chutes, which you then read. That's the fortune part, unique to you because of the first two set-ups. Exhibit called it "...a distinct novelty in the fortune telling line. There are four questions at the top of the machine. There are six answers for each question. As the pointer is turned to the question the different answers at the bottom automatically come into view. To operate, the player will put his penny in the slot according to the month of the year in which he was born. The penny will zigzag down over the pegs and stop in place on any one of the six answers." Often sold in banks, two on a platform on an iron pedestal base, in this example; "There are two machines each with a different series of questions. A pair of these machines on pedestal should be in every arcade, and every carnival arcade should carry two of them without the pedestal."

The origin of the machine is interesting. J. Frank Meyer of Exhibit Supply was not only willing to use outsider machines on a royalty, he encouraged it. The only stipulation was that the machine had to be patentable, assigned in his name. So all sorts of Exhibit Supply patents were issued to a wide variety of names, with Meyer indicated as having a piece of the action. And that openness of policy even extended to competitors, as long as Meyer was included in the patent. In the case of HINDOO, the inventor was August Schlag, a member of the Brooklyn group that had been developing the digger. Schlag was also a prolific inventor, and when his own outfit didn't want to touch a machine, or August wanted some outside royalty income, he went to J. Frank Meyer at Exhibit Supply. HINDOO is such a machine, filed on March 16, 1927 with its "Amusement Device" Patent No. 1,720,060 issued on July 9, 1929.

Exhibit Supply Company
STRIKING CLOCK Pedestal Athletic Machine
1927-1938

Shades of Rudolph Gatter of Philadelphia, for here is his landmark STRIKING CLOCK in Exhibit Supply's hands. It was probably the right place to go, for it had become an arcade standby, if not only a noisy one.

Gatter had defined and then refined his machine, the final STRIKING CLOCK 1922 MODEL becoming definitive. With Exhibit Supply snarfing up any and every machine they could find in the twenties, the Gatter machine came under their control. It was an exceptionally good move, for the STRIKING CLOCK is a lot of fun, and very loud. Not only that, it never seems to wear out, and that's neither its welcome to play or its parts. In fact, it was cataloged as both a new and used machine until the 1960s.

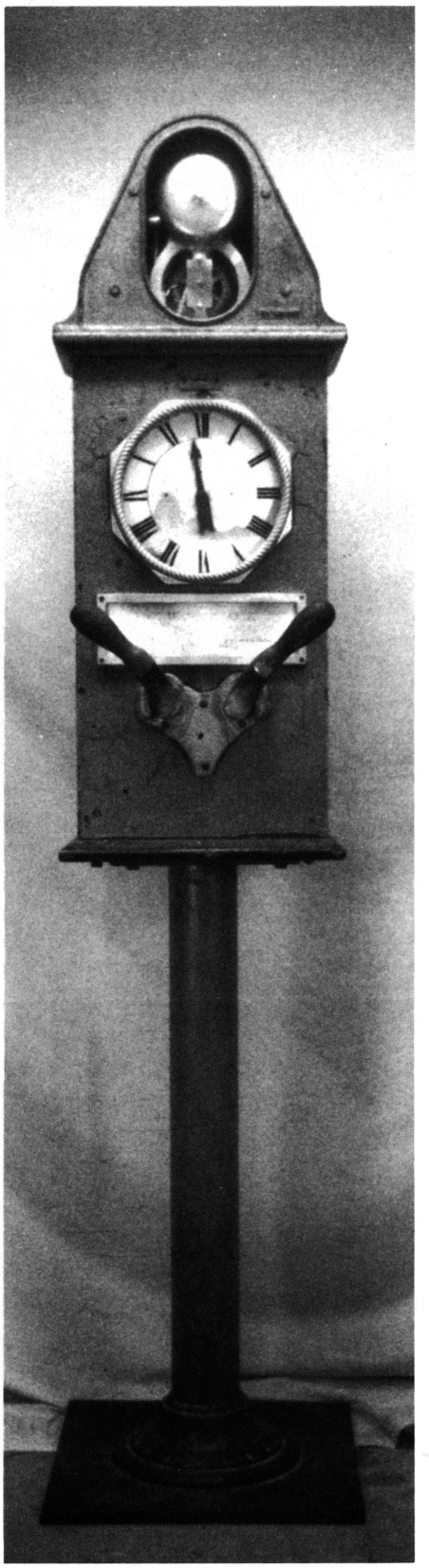
In operation; "It is a favorite with women and children as well as with men (Yeah! We've heard that one before!). Each player wants to see how many hours he can (That's more like it: "He!") register on the dial. To operate, the penny is deposited and one handle gripped in each hand, then as the handles are squeezed together (Can't you just see the ladies and kiddies squeezing that one off!) the clock hand moves around the dial. When the handles are released a large bell on top of the machine loudly strikes the number of hours registered on face of clock. The sound of the gong attracts attention of everyone within hearing distance. The STRIKING CLOCK is a proven money maker. Natural oak cabinet. Green enameled pedestal. Metal parts bright nickel-plated. Price $125.00."

Although the STRIKING CLOCK is in plentiful supply for collectors (but being soaked up fast!) it still commands a premium price because of its features. When that bell goes off at the end you're sure there's a fire in the next block and old trained fire horses are about to burst out of their barn pulling their pumpers. That's if the bell is available. There are a lot of these machines around without bells (it seems to have been the only part that wore out) in which case they aren't worth nearly the premium the complete machines are. And the reason is that bell. There just don't seem to be any around. Sure, other machines have them (Like the Exhibit Supply GRANDFATHER'S CLOCK) but they're worth even more, so the supply is seriously limited. The paper has been reproduced, so that's no strain. It's just those damn bells!



Steve Gronowski Collection.

Exhibit Supply made another variation of the machine called the LIGHTHOUSE Siren, which is almost the same thing with a lighthouse on top with a light and fog horn instead of the bell. And then there's the original Gatter Novelty Company versions to look into. But they're in even shorter supply, and more of a find than the Exhibit Supply model. But whatever you find, a STRIKING CLOCK is a striking example of 1920s arcade machine designs, and one sure to ring a bell when you've got guests coming over. But pass out ear muffs in basements or closed rooms.



Bob McGrath Jr. Collection.

Exhibit Supply Company
ELECTRIC ENERGIZER Floor Shocker Machine
1928-1932



Supposing we were to rate the Mills Novelty Company LARGE ELECTRIC SHOCK machine as first choice among all shocker collectibles as most vintage arcade machine collectors and dealers do, then this machine would be number two. And there wouldn't be much of an argument from those collectors and dealers, either. For this is the machine that has more plain good looks, and a clever shocker, than just about any other second to Mills.

Known alternately as the Exhibit Supply "Spear the Dragon" or the ELECTRIC ENERGIZER (with the latter its correct name, although in its day some people even called it "Saint George and the Dragon"), this cabinet shocker was a larger version of a slightly earlier and smaller countertop or pedestal model called the ELECTRIC VITALIZER, a more conventional grab-two-handles shocker. But the ELECTRIC ENERGIZER is a far more sophisticated device, for it is the only shocker that is motor driven. You don't grab some handles and squeeze them to increase the power; you just hold the knobs. That's what makes it so different. While it may have picked up the Egyptian figures of the ELECTRIC VITALIZER (and a lot of other machines by other makers around the same period, for the opening of King Tut's tomb had an enormous effect on world graphics at the time) it didn't adopt the method. The power surges into the knobs from a motor driven source, increasing on its own as the model of a man with a spear moves across the bridge at the top toward the green dragon waiting to pounce on the smaller figure. The spear carrier moves through areas marked weak, fair, good, strong and bell. The front of the machine sets up the tension, saying: "Spear the dragon. Test your nerve. Can you hold knobs until the bell rings?" And if you can, at point 2,400, the bell rings aloud, proclaiming you to be strong, courageous and skilled. There's no knob twisting to get the juice, just hold on.

Describing its workings, the 1929 Exhibit Supply catalog says: "The best and most novel electric shock machine in the world. Not only does the player get the thrill of the electric current, but he has the fascination of watching the Warrior move across the bridge and spear the dragon, whereupon the bell rings. The ELECTRIC ENERGIZER is the only machine of its kind made to run with an electric motor. To operate, the player drops in his coin and grasps the two handles. At first the current is very smooth, but as the man with the spear approaches the dragon, the current becomes stronger. The player tries to hold the handles until the bell rings. Beautifully finished display front with attractive top sign. Cabinet finished in natural oak with nickeled trimmings. A very handsome machine that gets a big play. Price $175.00."

The old fashioned cabinet and cast iron legs are still in evidence, as well as old style carved cabinet trim. But the rest is current technology for the twenties. Of the thousands of arcade machine types to be made over the years, the Exhibit Supply ELECTRIC ENERGIZER is one of a handful that are regarded as the true classic arcade machines, defining an important collection of these devices.

Gil Shapiro, Urban Archeology.

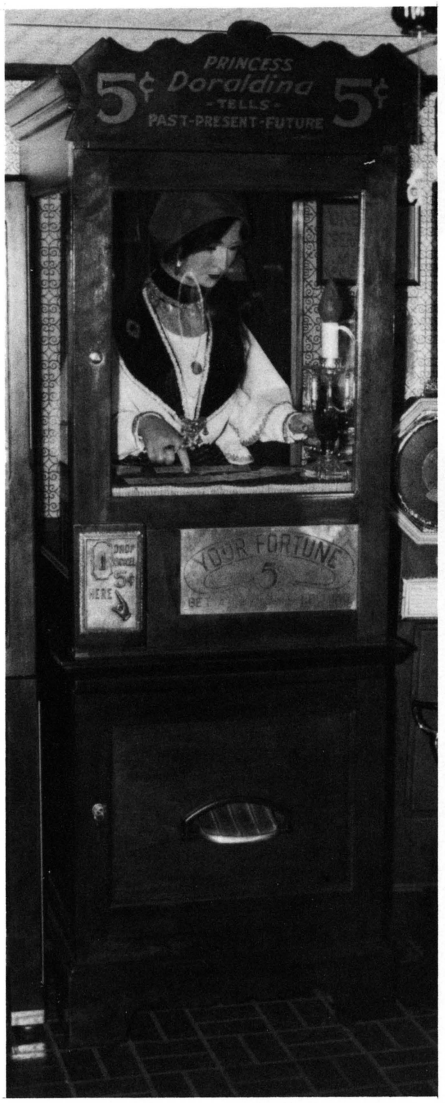
Doraldina Corporation

PRINCESS DORALDINA Floor Fortune Teller

1928-1932

We've some a long way since the Roovers MADAME ZITA of 30 plus years ago. She grew up! Full size "Lady-in-a-Box" fortune tellers weren't new – Mills and Caille had them before World War 1 – but PRINCESS DORALDINA was a new approach. For one thing, you liked her. She was young, pretty and ... spooky. Grownups saw her for what she was, an animated mannikin. But to children she was real, and whatever she had to say had to be the truth. And why not? Her head was wax, human hair was used for reality, and her glass eyes seemed so soulful. She was real!

But what made PRINCESS DORALDINA work on location wasn't appearances alone. It was machinery. If the older "boxed lady" fortune tellers had a problem it was in jamming. One stuck card off of a stack and no one got their money's worth and the machine was a space taking downtime disaster. And that was common stuff. It got so the big boxed fortune tellers got a bad name. That was the problem that arcade operator Edward Houghton of Niagara Falls, New York, put his mind to and ultimately solved. A fortune telling machine at Niagara Falls was a tremendous draw for the simple reason that the American Falls were the honeymoon capital of the nation and probably the world. There were more newlyweds at Niagara per capita on any day of the week — but mostly on weekends — than anywhere else on earth. Full of hope (and lust!) they sorely wanted to know what their future would bring. Houghton created a vending system in which 4-page folders (they were like little booklets) were sliced off the bottom of a weighted stack. The trick was criss-crossing the folders on an alternate basis, with four posts holding the x-shaped stack in position so nothing slipped out of place. Receiving financial backing from Andrew H. Bornkessel, another arcade operator from Rochester, New York, Houghton applied for a patent 3 months after its introduction, getting it almost 2 years after that (Patent No. 1,742,445 for "Feeding Mechanism for Sheet Material," Patentee Edward Houghton, of Niagara Falls, New York, filed March 26, 1928, patent issued January 7, 1930). The resulting Doraldina Corporation was formed in Rochester.





Bob Legan Collection.

The advertising for the machine said "PRINCESS DORALDINA has arrived. Ask the princess, she knows. Ask the princess, she breathes. PRINCESS DORALDINA is now available for parks, dance halls and amusement palaces. Into every amusement man's life, some time, some place, opportunity comes knocking at your door. It may be loud enough so you can hear it, or it may be a faint tap. But, we are boastful enough to say that the PRINCESS is using a sledge hammer on you. Don't wait for opportunity to knock your door in. This machine will return you more money for the space occupied, and the investment, than any other device in your park or hall. Do not delay, but order now for spring opening."

Provided they followed instructions. The packing of the figure and cabinet was so intense, it had packing and wires to hold things in places people never looked. It got so the maker sent hand written notes with all machines that said: "Important. Remove plate from back of figure and take off wire holding head piece on the inside. This must be done before operating machine." Sometimes it wasn't, and she wouldn't move. Early models had nickel plated cast iron feet, while later versions had stocky wooden feet to the floor. The 4-page "Princess Doraldina's Prophecies" became keepsakes, and are most often found in papers at town or farm estate sales of older homes.

Chester-Pollard Amusement Company, Inc.

THE DERBY Floor Amusement Machine

1929-1932



Photo by Dick Bueschel.

There were small machines, and larger machines, and even big machines in an arcade. And then there were the Chester-Pollards. They were the really big game machines, usually 2-player, made by the Chester-Pollard Amusement Company, Inc., of 430 W. 45th Street in New York City. We put the full address here to dispel a myth. No, the Chester-Pollards weren't European, or specifically British, machines. And yes, they certainly did have English features. But they were red, white and blue American developed and produced. Well, up to a limit.

What had happened was that the three Chester brothers (Frank, the visionary; Charles, the mechanical wizard and Ernest, the business man) had started the make a balloon popping fortune teller when an English coin-machine maker brought a machine called the FOOTBALL GAME to the states to sell production rights. In spite of the fact it was a simulated soccer game, and therefore "foreign" in concept, the Chesters (who called the enterprise Chester-Pollard, the latter their mother's maiden name) bought in, and their first coin-op went on to great success.

So they made more, using much the same crank-turning power drive and other British features on their American games. Of the many sport simulation games made by the New York Firm, their THE DERBY was among the best. Also called "Play The Derby" (because that was the copy on its marquee) the game is a frantic double crank turning race between two horses on an oval track. Not one once, but twice around to win the race. First called the INTERNATIONAL DERBY, and later just THE DERBY, this horse race amusement machine is very scenic with its painted background and 3-dimensional model racetrack. It is closer to the original exhibition machines of half a century earlier than the video games of a half a century later.

In its initial press introduction it was called "...a race between two world-famous horses from American and English stables. The little thoroughbreds, mounted by life-like jockeys are controlled by two wheels turned by the players of the game. In the operation of the wheels, the mechanical process is the same as that used in a steam engine, the speed being regulated by a centrifugal governor. If the wheels are turned to fast, the arms of the governor disconnect a clutch, causing the horses to stop, or balk. So it is that the skill, as well as the fun of the game, depends of the judgement of the players and their ability to turn the wheels at the proper speed — neither too fast nor too slow. If it were merely a matter of rotating the wheels at great speed, the muscular player's horse would win every time. But, because of the ingenious mechanism, men, women and children are on equal terms as competitors, and the game provides much more amusement then if it were a test of strength."

Locationwise, the Chester-Pollard THE DERBY had some prime spots, including "82 ocean and coastal passenger ships; in railroad stations of the Pennsylvania; Lackawanna; Jersey Central; New York, New Haven & Hartford; Chesapeake & Ohio'; Southern; Seaboard Airline; Nickel Plate, and others. Like most Chester-Pollards, it was everywhere.

Atlas Indicator Works

BASEBALL Floor Amusement Machine

1930-1933

A ball in free fall that you actually hit with a pivoted bat? It sounds almost impossible, yet it made for a game that had real physical thrills and sorry misses built into its operation, an idea that was repeatedly copied in the years ahead. When this clever machine burst on the scene, nothing quite like it had ever been done before. It was that treasure of a coin-op that rarely comes along, the really new idea.

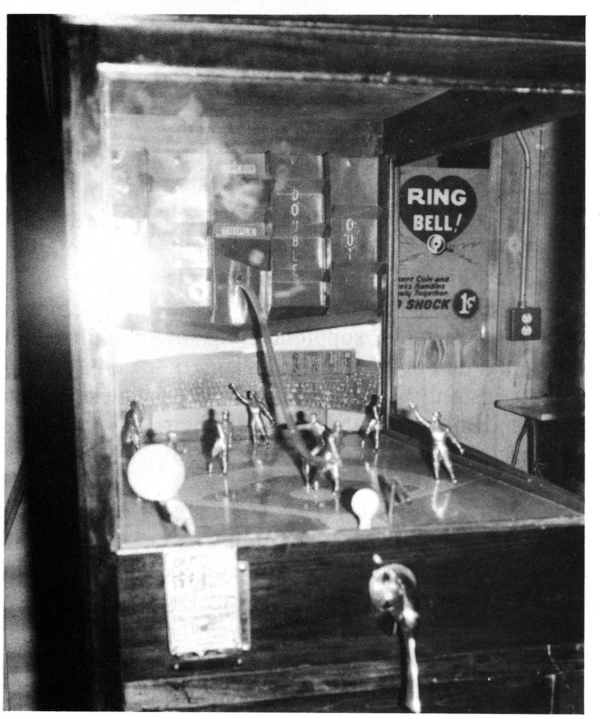
It came out of a stint in the United State Veterans' Hospital No. 102 located in Lovermore, California, by World War 1 vet Lloyd B. Elliott. Bored to tears in a facility full of wounded but energetic patients in the middle 1920s, Elliott put his fertile imagination to work and created toys and games that would keep everybody occupied and amused. He developed a mechanical football game, a 3-hole miniature golf game (before the craze for miniature golf hit the country) and three variations of the game of baseball. Of the latter, the most successful was the desk size version in which a small steel ball was dropped down an inclined trough that curved up at the end. In front of it, perhaps a foot or so away, was a pivoted bat operated by a player, who slugged at the flying ball as it came off the end of the incline, gaining speed in its fall.

Of all of his games developed as part of the hospital recuperation programs (many which remained in veteran hospital use throughout the thirties) it was that free fall baseball game that held out the most promise as a commercial product. Elliott tried his hand at amusement devices for carnivals and fairs with little success until, working the the Vending Machine Division of the Atlas Indicator Works in Chicago, be proposed they try out a coin machine version of his tabletop BASEBALL game.

It made history. The moment it came out it was a success. The Atlas Indicator literature of 1930 described the reasons why: "...Not an experiment. Developed by an operator or operators. Ball is pitched and batted through the air and batted back as a line drive or a fly ball according to the skill of the player. Remember the aerial feature makes this the most fascinating of all. No complicated scoring mechanism is necessary. The thrill is in socking that ball through the air. You don't have to worry about competition in this field, we have found it isn't noticeable. A number have been in operation if San Francisco for the past year. All the bugs are out, having been eliminated through experience gained in actual operation."

Later models repeated the refrain: "Remember, the ball is in the air, not rolled on the floor. Different. Absolutely different." The machine remained a hot seller in 1934, discounted from its original price of $475 to $150 and described as "Atlas Indicator wonderful electric BASEBALL machine. The only machine made that the player bats the ball on the fly. A perfect mechanical wonder. Game lasts half a minute. Fastest money-maker ever produced for Sportslands and Casinos." The game was still being sold used for live operation in 1947. As for Elliott, he went on to become a major pinball designer of the 1930s.





Steve Gronowski Collection.

Exhibit Supply Company

COUNTER IRON CLAW MODEL E Counter Digger Machine

1930-1932



Steve Gronowski Collection.

Here come the diggers, for real this time. Once Exhibit Supply embraced the idea in the late twenties, diggers became the bedrock of the arcade business, supplementing the pecuniary power of the card venders. Almost instantly, a full line of digger types and location models made their appearance. Most were tall, floor standing machines for semi-permanent location, such as hotel lobbies, train stations, public buildings, cigar stores and arcades. Once placed, they just stayed. But another location plan was growing by leaps and bounds, and that was the traveling carnival and county fair. Arcade facilities went with them, which meant everything had to be set up overnight, and broken down and packed away just as fast. So big monolithic machines were out. The carny spot called for a set-em-up and get-em-out philosophy, so the countertop digger was developed.

Digger evolution moved fast at Exhibit Supply. The IRON CLAW MODEL A appeared in 1927, followed by the MODEL B early in 1928, both pickups of earlier eastern and Brooklyn designs. J. Frank Meyer wisely paid for enhanced, and patentable, models, a decision that would pay him handsomely in the future. The counter idea for carnival operators came along in 1929, with the machines set up in banks at carnivals and fairs on long counters or even picnic tables. MODEL D was a late 1929 entry, having its own countertop model, with MODEL E the definitive and most popular to date showing up in 1930.

With the arrival of the IRON CLAW MODEL E Exhibit Supply had carved out a commanding position in diggers, a position they never relinquished. Only when diggers became passé after World War 2, and disappeared altogether, did Exhibit Supply loose its franchise on digger operations. Years later, the machines came back, only it was a whole new breed of producers.

MODEL E added a lot of improvement over earlier Exhibit Supply diggers, including a new top design, multi-adjustable claw, dustproof cabinet, a new design for the warehouse background artwork, a patented Exhibit Supply coin slot, a return cup and a lot of other details. The COUNTER IRON CLAW MODEL E (also called the OPERATORS MODEL E because it was made for traveling professional operators) brought all this newness to the portable model to be "...operated profitably in roadside stands, parks, piers, hotels, carnivals; everywhere where there are men, women and children" according to contemporary Exhibit Supply literature. The machine cost $225, and a wood base was $10 extra.

With machine and bases in hand, the roving operator was in business. The 1931 literature tells how: "The IRON CLAW is convenient to handle. Two claws and two knocked down bases will easily fit into a Chevrolet Coach, and three claws with bases can be carried by taking out the rear seat of a Chevy." In play, the player turns the locator wheel to the spot over a desired prize — maybe a cheap wrist watch — by swinging the arc and position at rear, center or front, and then drops in a nickel. The claw turns to the selected spot, drops down open, closes up — and maybe grabs that watch — and shivers and shakes its way to the delivery chute, usually dropping whatever it was holding in the process, with only a few candies making it out the hole.

Peo Manufacturing Company

BARN YARD GOLF Counter Amusement Machine

1931-1932

Howard J. Peo, of Rochester, New York, was the classic coin-op success story. He started as an operator. And he had a small machine shop in his basement. He'd operate, and make a machine. It would die. So he'd keep operating and make another machine. And it died. And he'd keep it up. One day, his machine didn't die, and Howard was in the manufacturing business. It started with a 2-player called BASKETBALL and then never stopped for a decade. It led to his incredible invention of the Peo LITTLE WHIRLWIND, a landmark machine that was copied by half a dozed makers, except for the fact that Peo remained the guru of the game. He know how to house that little spinning steel ball better than anyone else.

Peo dropped his LITTLE WHIRLWIND on the market in the fall of 1930, and it was backordered in weeks. A continuing spiral on the face of the machine sped a ball round and round to stop in a hole for score, 5 balls for a penny. And just when the competition got comfortable with the spiral, Peo changed the course of the ball with BARN YARD GOLF. This time the ball sped to the center, then dropped into one of 6 holes falling out of the top of the loop. It was different, but same enough to be covered by the same patent to give the game protection. The game had a card game front and came with either a BARN YARD GOLF or PLAY POKER marquee. The copy of the face of the machine says "Play Poker. The Deuce is wild! Directions. Press lever down. Release by sliding finger off." Then, off to the right side of the front while facing it, the patent data made sure people knew where this ides came from. The panel says: "This is not a Gambling Machine. It is a game of skill patented in the U.S. Patent Office, January 6, 1931, Patent No. 1,788,323. Design patent applied for and mechanical patents pending. Infringers will be prosecuted to the fullest extent of the law."

And Peo could do it. His patent protection was very clear, for there was nothing even close to it in the patent art. even described the appeal of the in his patent: "The ...contemplates offering to the public an interesting and novel game to be played by one or more persons at the minimum possible cost — one cent per game — and which will in no way conflict with the law respecting coin control machines, or in the least offend the moral sense of the public. It will be prominently displayed in the shops of merchants, or generally in places where people assemble and which will suggest or prompt those seeing it with a desire to play. The game may be operated with equal skill and enjoyment by children or adults." You may want the patent. It is very detailed and self explanatory, and shows enough to produce the game from scratch: Patent No. 1,788,323, "Game of Skill," Patentee : Howard J. Peo, of Rochester, New York, application filed October 22, 1930, patent issued January 6, 1931.



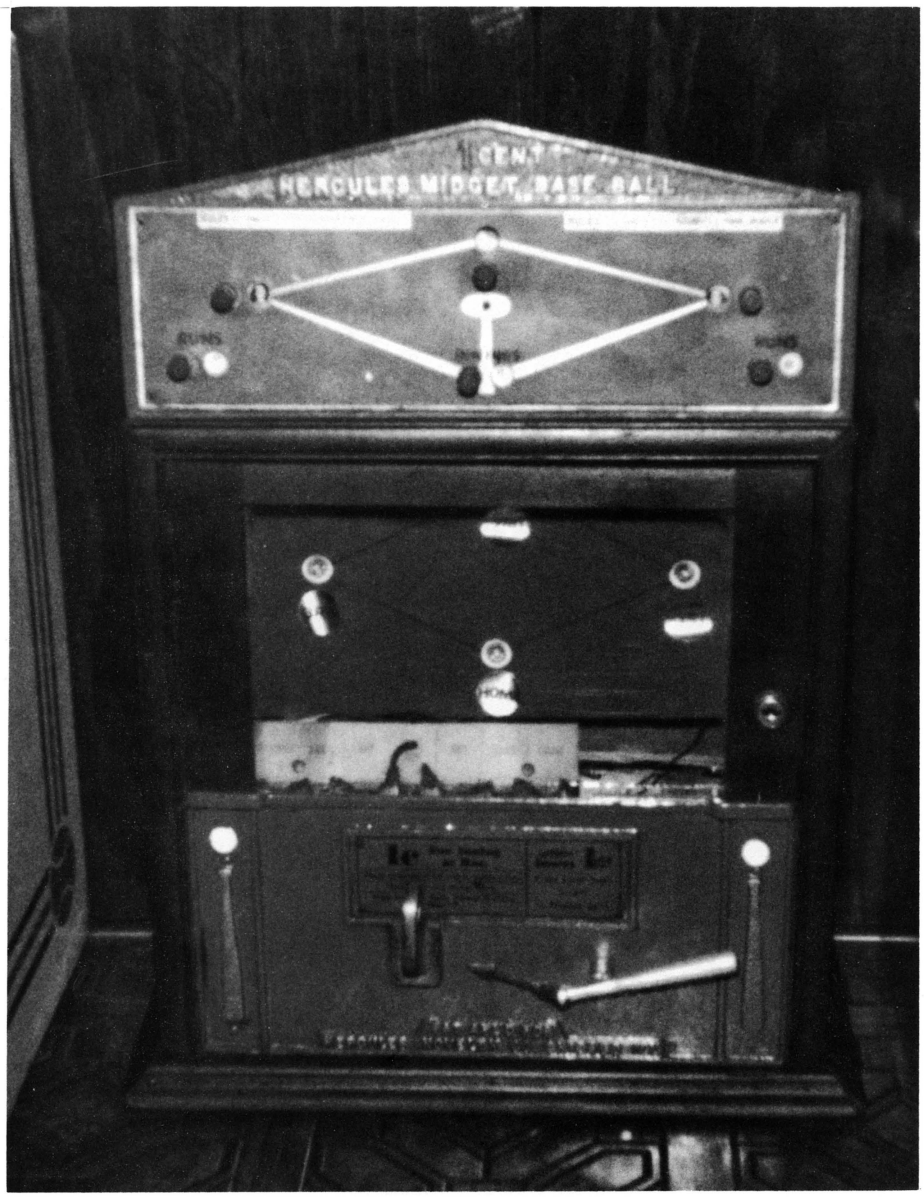
Charles Deibel Collection.

Later models included a ball gum vending feature, with the ball gum instruction in place of the Patent Panel. Peo advertising said; "Vending machine profits are always staple, they are not subject to Depression or seasons. This combination ball gum vender and amusement machine will bring in the same profits week after week, month after month.

Hercules Novelty Company

MIDGET BASEBALL Counter Amusement Machine

1931-1932



Tom Gustwiller Collection.

To some, their coin machine manufacturing companies were the ultimate expressions of a dream, and the end result of a long term plan. To others coin machines were a side effort to their major business. Then there were those who stumbled into the arena. The Hercules Novelty Company of Chicago was a stumbler.

It all started then Charles R. Chizewar, an immigrant Polish Jew who had established a locksmith's shop in Chicago, adding machinery repair and light manufacturing, was visited by a would be coin machine maker in the late twenties with a request to produce a grip test under contract. Chizewar took the job, and realized the countertop coin machine needed redesign to make it produceable. So he did the job, didn't get paid for the engineering, and lost the contract when the buyer decided to go into production on his own. Charlie sat there with 250 counter grippers. So he called it the HERCULES, and changed the name of his namesake machine shop to the Hercules Novelty Company and started advertising. It led to a production business.

Chizewar's next machine was a very early pinball game called ROLL-A-BALL, introduced in the spring of 1931, and the new coin machine maker was on his way. Once again, the machine was a bring-in product by a customer who also reneged on his order, and Hercules Novelty had another market entry. But that was it. From that point forward, Hercules Novelty was on its own. And, surprisingly, it did quite well with a raft of clever ideas. The third machine down the line, after two grips and before the ROLL-A-BALL pinball game, was MIDGET BASEBALL, a clever countertop batting game introduced in January 1931. The clever part is that the game is electric. Every time a base hit is made, a light bulb at the base lights up. Then, whenever a home run is made, a buzzer sounds. Small as it is, the MIDGET BASEBALL is a veritable box of sight and sound, only 21" high.

Advertising describes its workings: "Here is our new biggest money maker. The most successful miniature Base Ball machine which appeals to young and old. Half inning for one cent. 1. Insert one cent, pull lever down slowly and the game is on. 2. Press lever down and let go; a steel ball will jump across the field. If the ball lands on a base or home run, a colored electric bulb lights up, and the ball return for another play. 3. The player continues the game until he has made three outs. After making the third out the inning is over, and the player must deposit another penny to continue the game. 4. On top of the machine a register is provided to record the game. An ordinary dry cell battery is used which will last a long time and ran easily be secured in any hardware store for replacement. A beautiful piece of furniture on the counter of the store." And not only that, a tremendous incentive to keep playing. Two players, in a nine inning game, would pump in 18¢, and for that they got a long game with a lot of highs and lows. It's a terrific piece.

To be sure people knew where it came from the front castings have a lot of information. The top says: "1 Cent. Hercules Midget Base Ball," while th bottom adds, "Pat. Apl'd For. Herc Novelty Co., Chicago, Ill."

International Mutoscope Reel Company, Inc.

GRANDMOTHER PREDICTIONS Floor Fortune Teller

1932-1941

The Doraldina Corporation PRINCESS DORALDINA set a whole new pace for "boxed lady" fortune tellers, and the market soon responded. One of the more elegant entries was from the newly reorganized International Mutoscope Reel Company, Inc. of New York City, now fully under the control of Bill Rabkin and making an all out run for arcade machine leadership in direct competition with Chicago's Exhibit Supply Company. The PRINCESS DORALDINA card stack, also used on a similar William Gent machine featuring a wise old grandmother, is what made the difference, so International Mutoscope copied both of them in their 1932 GRANDMOTHER PREDICTIONS, the fortune teller that would bring the lady-in-a-box back to her rightful spot of being right in front to be the first machine you'd see in any arcade.

To say that International Mutoscope copied the two earlier machines is misplaced. What International Mutoscope attempted to do was subvert the prior Doraldina and Gent patent positions by developing their own system that got around the patent, giving them both the right to produce as well as a unique way of accomplishing the same job. In that they loaded up the cabinet new names and castings, with the name GRANDMOTHER PREDICTIONS in a lighted glass panel at the top. The center denominator castings says: "Let Grandma Tell You! 5¢. One Nickel," while the most elaborate casting of all at the bottom adds: "Grandmother Predictions Mfd. by International Mutoscope Reel Co., New York City, U.S.A., Patent Applied For." It was that last mention that made the difference, for Bill Rabkin had indeed developed his own system and got as far as an active patent application. Except he never got the patent. For years and years, long after the patent hope had been crushed, GRANDMOTHER PREDICTIONS carried that "Patent Applied For" casting. But it was never to be.

The one idea they did copy right out the window was the manikin of a nicer lady. International Mutoscope rode the middle ground between Gent's grandmother and Doraldina's princess and came up with a younger, nicer looking grandma. You just had to like this lady, and she didn't look so foreign. Everything else inside the glass was pure Doraldina, lighted candle and all. Then came the one major advantage that International Mutoscope had over both Doraldina and Gent, and that was their paper business. As the producer of card venders, just as Exhibit Supply was in Chicago, as well as the maker and placer of MUTOSCOPE peep shows and other fortune tellers, the International Mutoscope Reel Company, Inc. was a major software maker. Cards, reels, stereo views and "GRANDMOTHER PREDICTION cards, horoscope cards and cards for machines of similar type" were turned out by the firm for years, actually decades. It was the bedrock of their business, so they were a single source paper supplier for any and everybody in the arcade machine operating field.

GRANDMOTHER PREDICTIONS had a very long active life. It was a very popular machine during during World War 2, telling its players the fortune of war. The *Marketplace Magazine* "Confidential Price Lists" of used machines still carried it at $300 as late as November 1981.



Gil Shapiro, Urban Archeology.

International Mutoscope Reel Company, Inc.

DELUXE CHAMPION Floor Digger Machine

1933



Steve Gronowski Collection.

The face down between International Mutoscope and Exhibit Supply occurred in diggers more than any machine. Both jumped into the field in the late 1920s, Exhibit Supply first with International Mutoscope soon to follow. The fact is, they were so close in timing and in machines they soon found themselves stumbling over each other's patents and models. Only later, when they agreed to share, was that ironed out without an all out patent war.

Evolution in both lines moved rapidly, and in parallel. But there were also major differences. William Rabkin did the same thing J. Frank Meyer did; he parked himself in the lap of two of the leading Brooklyn digger developers and in concert they created a new approach for International Mutoscope. After some seesawing of models and approaches, Rabkin zeroed in an a line he called the CHAMPION, based on a mechanism he had worked out with Brooklyn inventor Charles Fleischer (Patent No. 1,888,050, "Amusement and Dispensing Device, " Patentees William Rabkin of New York, and Charles Fleischer, of Brooklyn, application filed October 18, 1929, Patent issued November 15, 1932). With that International Mutoscope's leading digger line was on its way.

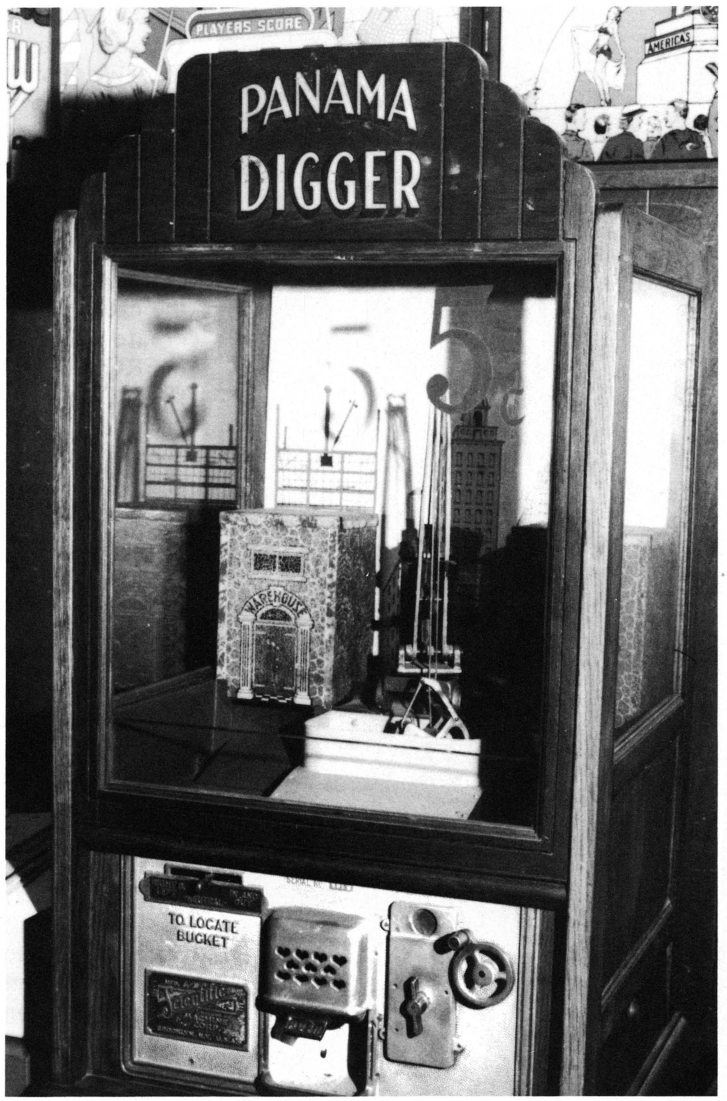
The DELUXE CHAMPION shown here is a down-the-line version in a Deco cabinet with a lot of typical International Mutoscope trim. The basic name for the firm's line of diggers was the ELECTRIC TRAVELING CRANE, of which this is the DELUXE CHAMPION model with new cabinetry and a number of other features, including shatterproof glass (something you would have thought would have been a part of the digger from its very beginnings, which apparently it was not). Other features, based on the machine's advertising copy, included "...beautiful chromium trimmed cabinet, all mechanical parts chromium finished, mirror back, special tested chain on the digger — no more cords to break — only one of the many improvements made in this new model, the DELUXE CHAMPION."

That chain mention is important, and interesting. Early diggers had rope pulleys. Even though it was only a model of a larger industrial machine, the arcade diggers were generally worked harder than their full size originals, for people were pumping pennies and nickels into them all the time (the price depended on the type of location, and the slum fill). So the cords snapped, at which time the operator faced a difficult re-stringing operation under tension to keep the lines tight. The chains changed the situation. For one thing, chains looked more industrial, and real. In the case of the International Mutoscope CHAMPION models, the entire cam action, crane workings, chains and claws were more visible and a lot of fun to watch in operation. But this neater look compared to similar Exhibit Supply machines had its price. The CHAMPION and its DELUXE models were a bear to rechain. It's not that the chains broke (they did, but rarely). It's that rough handling of the play handles, or an inside jog on a picked up product, could pop the chains out of their tracks. And that's when operators learned to hate their International Mutoscope machines. Except they look so good with all those castings and things.

Scientific Machine Corporation
PANAMA DIGGER MODEL C Floor Digger Machine
1934-1937

When it came to diggers, what went without saying was electricity. Above all else, this was an electrical game. Position left right front back was by hand, of course. But once that was accomplished and the coin was dropped, what happened next was in the lap of the gods. And electricity. The wheels would whirr, the chains would move, and the grippers would drop. To catch, or mostly miss, whatever was situated below. And that loss of control is what cost the player the prize, because there were blind spots the grip would never cover. The operators knew the field pattern like a book, and packed the watches and cigarette lighters in those uncovered areas so everything looked to be on the up–and-up, whereas in reality there was no way to reach those areas.

Except on the Scientific Machine Corporation PANAMA DIGGER. It was a hundred percent mechanical, and what you saw was what you get, because you had full control over positioning and the drop. Its inventor, August Schlag of Brooklyn, was associated with diggers from their very inception during the World Was 1 years. Working with Charles Fleischer from 1918, Schlag was the man that worked out all of the mechanical details of the first operational claw. When Fleischer teamed up with Alfred Norwat, creating their own manufacturing company, Schlag dropped out of the picture and pursued the development of an all mechanical claw in a countertop cabinet for use by traveling operators. The whole idea was to create something light enough and small enough to cart around for summer resort and carnival operations where electricity might not be available. Named after the Panama Canal, the largest digging operation and engineering feat on earth (The U. S. excavations started in 1906, with the canal accepting its first traffic on August 3, 1914, the day Germany declared war on France to start WW1 in Europe), Schlag's device was finalized in 1928. The next year, when Max D. Levine formed the Scientific Machine Corporation in Brooklyn to make arcade class machines, Schlag landed the job as factory superintendent and his PANAMA DIGGER became the firm's first product. It was rushed through a series of developmental models to improve the breed, with the changes being largely cosmetic as fashions changed. It was promoted as "The world's finest trench digger. PANAMA DIGGER. Designed right, built right, priced right."



Paul Biechler Collection.

The MODEL C of 1934 differed from its earlier models by being boxed in a Deco cabinet. It was introduced right after Scientific Machine Corporation had moved from its tight quarters at 89-93 Grand Street to its more spacious digs at 1072 Atlantic Avenue in Brooklyn, providing more office space and a large showroom. The new model reflected the growing business and expansion of the Scientific Machine lines in the face of the Great Depression. The firm was a success story, and so was the PANAMA DIGGER MODEL C. It was promoted as the "world's smallest digger. 100% accurate selectivity and locating device. Interchangeable, removable mechanism. Nickel or penny coin-attachment." One key point was its ease of maintenance: "The entire mechanism of the PANAMA DIGGER is removable at a moment's notice as a single, complete unit. This feature is of vital importance to the operator and is to be found only on the PANAMA DIGGER." Legs, or a base, made the countertop model a floor machine.

Exhibit Supply Company

1935 NOVELTY MERCHANTMAN Floor Digger Machine

1934-1935



Steve Gronowski Collection.

The Exhibit Supply diggers went through the same facelift operation as all the others, changing cabinet styles, inside backdrops and woods. And changing whole concepts. As successful as the large Exhibit Supply IRON CLAW machines were, there was room for a simplified, more modern model with a more active back display. Once again it was sales maven Percy C. Smith to the rescue. Perc Smith did a complete redesign of the cabinet and insides to create the NOVELTY MERCHANTMAN, a sleek, Deco-designed model that added a fabulous backdrop. Instead of the flat ship's bow of the IRON CLAW, Smith included a full aluminum casting of the front of a boat and its bridge with the crane on its forward deck. Then, to add to the charm, a Hawaiian backdrop with a palm tree and a large shining sun was stuck behind the boat, although it quickly wore out and was often replaced with drapes, wallpaper or another patterned material.

The greatest addition made by Perc Smith was better illumination and ventilation. Closed boxes in hot rooms soon degraded the candies, toys and presents on a digger's vending platform, resulting in a loss of play and the need to completely re-do the set-up. Also, arcades were often dark, and players couldn't see what was in the machines. So Smith solved both problems in a complete redesign which he then patented to give the exclusive rights to the Exhibit Supply Company (which didn't work, as International Mutoscope quickly copied the whole idea). In making his changes, Smith outlined the need: "Heretofore there has been a problem in connection with these machines in securing adequate and proper illumination of the merchandise storage and display compartment without causing the light to glare in the eyes of the player or operator. (An) object of this invention is to provide an illuminating unit for a vending machine of the crane type which embodies and uses an ordinary standard light bulb and a new and improved parabolic reflector, this unit producing as much as three times the effective illumination in the display compartment of the vending machine as is produced by the elongated tubular show-case lights heretofore used in vending machines of this type (Patent No. 1,997,701, 'Vending Machine,' Patentee Percy C. Smith, Chicago, Ill., assignor to John F. Meyer, Chicago, Ill.)."

As successful as it was, the NOVELTY MERCHANTMAN was soon up for yet another improvement, the latter the idea of Claude R. Kirk, of California. J. Frank Meyer, who lived in Flintridge, California (and commuted to Chicago by train, an early expression of cross country living almost 40 years before jet travel made it a viable alternative to living where you worked), became enamored with the smooth talking Kirk, a local trade stimulator maker and operator, and sent him packing to Chicago to become the firm's vice president over sales manager Perc Smith. Kirk quickly picked up on prior work by other Exhibit Supply engineers and designers to create a large hopper type dispenser to avoid the problems of premium clogging (Patent No. 1,998,625, "Delivery Service," Patentee Claude R. Kirk, Chicago, Ill., assignor to John F. Meyer, Flintridge, Calif.). They stuck it on the front of the machine to create the "Roll Chute" 1935 NOVELTY MERCHANTMAN, as shown.

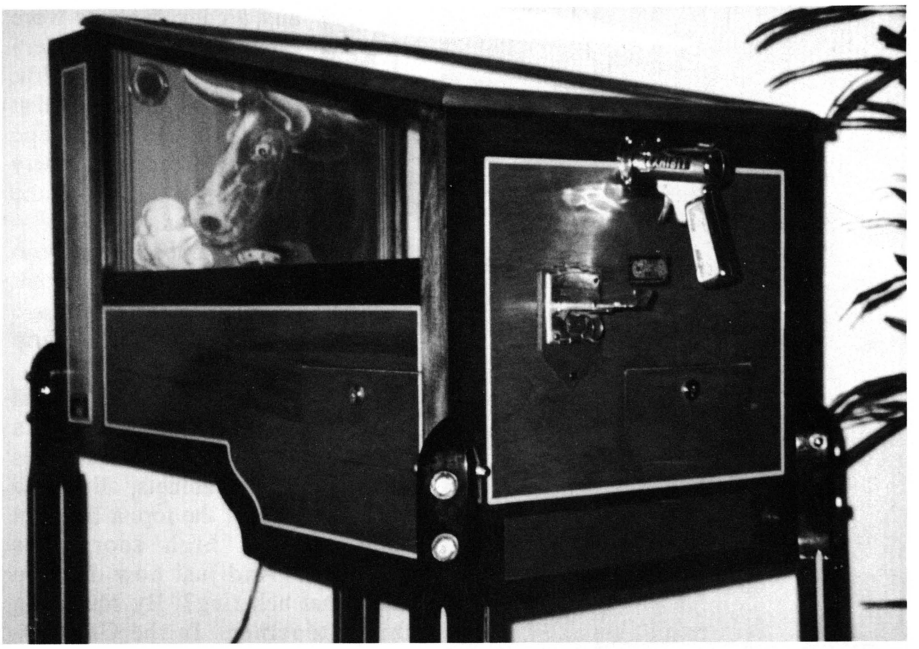
Exhibit Supply Company
ELECTRIC EYE Floor Target Game
1936

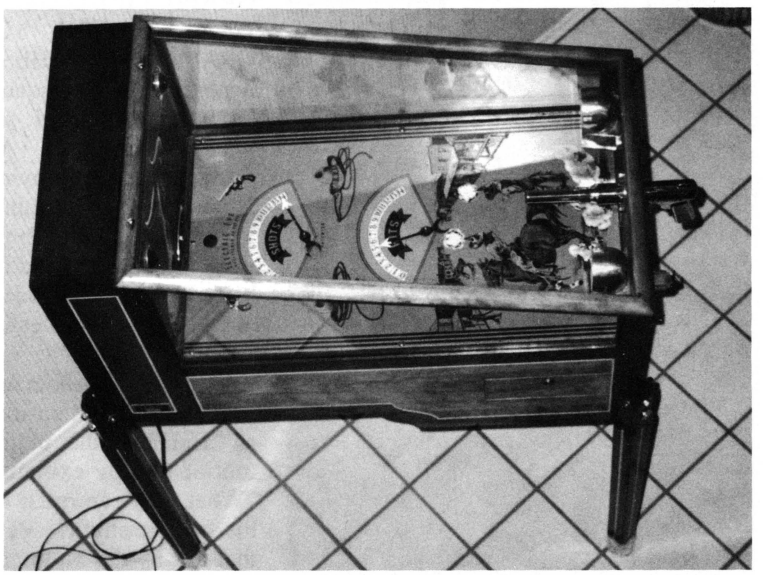
No Bull! They actually made an automatic payout coin machine for arcade locations at Exhibit Supply, and for a time it sold. But then time, tide and the law caught up with them, and one of the most unique arcade machines ever made ended its active service life.

From the very beginning coin machines have been tied to the latest high technology developments, figuring out how to use new display and engaging ideas to sweep in the coins. It's the same today. And while it looks like the modern arcade machine is at the peak of its development rush with new ideas tumbling into the marketplace everyday, that's just not true. The videogame reigns, and it hasn't changed that much. First B&W, then color, then added action, laser discs and coming up are holograms. That's exciting, but just as many new developments came along in the 1930s — and probably more — to keep the arcade machine changing. One of the most exciting was the electric eye, a circuit completing beam of light that offered new game applications.

It wasn't easy for the coin machine manufacturing companies to keep up with the changing times. It was expensive and time consuming, and everybody already had their job to do to get product produced and out the door. So they often left the emerging technologies to a handful — soon to be a country full — of independent contract game designers. Many of the designer greats tried a stint at contract game design. Harry E. Williams and Lyndon Durant — their names will show up later — did it in pinballs. George H. Miner, from California, did it with arcade machines and trade stimulators. And Joseph H. Tigerman of Chicago, did it for almost everything.

Joe who? Tigerman! Joe Tigerman is one of those names all but lost in coin machine history. He showed up early in the pinball period, selling games to two or three makers, and once even trying to make it on his own. But no such luck. So Joe kept up with current technology, and sold his ideas to any takers. And that included this electric eye game to the Exhibit Supply Company (Patent No. 2,052,678, "Amusement Apparatus," Patentee Joseph H. Tigerman, of Chicago, Illinois, application filed November 15, 1935, patent issued September 1, 1936). Called, to capitalize on its method of play, ELECTRIC EYE, it was in effect a variation of the A.B.T. game of TARGET PRACTICE with the head of a bull as the target. And that gave the game its backup name: "Shoot The Bull."





Donald O. Beckwith Collection.

At the beginning you popped targets, and won money, or built up score: "Exhibit's new scientific marvel. Direct from the laboratories of modern science — comes this great miraculous engineering achievement to present to the wide world public. It's not a bullet or pellet shooter. It shoots a streak of light. A thousand times faster...a ray beam at each pull of the trigger. It's a 100% fascination skill game. Built in two models, an automatic payout and straight amusement. The first hit on a payout model spins award indicator, with payouts 2-4-6-10-20. Player must then make four successful direct hits out of 14 allowed shots to collect." Later models had a large marquee, and had ticket, token and jackpot payouts.

International Mutoscope Reel Company, Inc.

CHEST-O-GRAPH Floor Athletic Machine

1938-1941



Allan Pall Collection.

Many arcade formats were established in the modern day and age of the 1930s, and haven't changed since. At that time, the International Mutoscope Reel outfit had some dismally ancient machines. It's not that the machines themselves were old — they weren't, contained in the Deco styled fine wood — but rather that they harkened back to an earlier age or arcade amusements. Such as grip tests.

In the late 1930s International Mutoscope Reel came out with a whole line of physical test machines in similar Deco cabinets, all with a brace of lights at the top, a bell that rang when a high score was achieved. And just how did you make that bell ring? By squeezing things together. In the GRIP-O-GRAPH, LIFT-O-GRAPH, SHOULDER-O-GRAPH, SQUEEZE-O-GRAPH and this CHEST-O-GRAPH hand grips did the squeezing. In the THIGH-O-GRAPH, you squeezed your knees together. After that they were a lot alike, moving the pointer around the dial, flashing those lights and ringing that unremitting bell. It was a sight to see and hear along the back wall of any arcade. International Mutoscope Reel called them their "Strength Testers!"

They sold them as a set, with ganged copy that positioned them all as "Machines that pull..." The promotional copy explains the appeal: "What man can resist a challenge to his own strength? Very few. And that is why the Mutoscope's strength testers are such steady money-makers — because they give a man a chance to show off. PUNCH-A-BAG, LIFT-O-GRAPH, THIGH-O-GRAPH, GRIP-O-GRAPH, SHOULDER-GRAPH, CHEST-O-GRAPH — every one of these is psychologically designed to get repeat plays. Every time a coin is inserted into one of these machines, the customer puts on a one-man show, either showing off his own strength or endeavoring to show up a companion or spectator standing nearby. Or, very often, the admiring feminine contingent. A powerful man sets a goal for others to equal or surpass while the dial-reading of an average man prompts others to show how much better they happen to be. Mutoscope Strength Testers are scientifically designed to gauge strength perfectly. They're foolproof...100% legal...popular everywhere. And they have built-in ballyhoo: an ingenious arrangement of lights and sounds which ballyhoo the performance of the player. Investigate these surefire moneymakers for your location."

One wonders how many did, for these machines, plain though they may be, are relatively rare. Sold new for years, probably out of inventory during the World War 2 years and afterward, their production was centered at Mutoscope's own 5-story building at 44-01 Eleventh Street, in Long Island City, outside of New York City. This new 1939 facility picked up all the production at Mutoscope's two plants in New York City as well as one in New Jersey. It was the final resting place of Mutoscope production, yet was only 10 minutes from Times Square. It was from there that "The Penny Arcade Headquarters" of International Mutoscope Reel Company Inc. pursued its of outfitting, "...individual lines, Railroad terminals, etc." But it takes a lot of room to store one of the IMR strength testers, because these babies are really big. Repeat that: Big!

Exhibit Supply Company
1938 LOVE METER Counter Information Machine
1938-1940

Big ones, little ones, tall ones, short ones, fat ones and skinny ones, Exhibit Supply made them all. No producer before Exhibit Supply (except maybe Mills Novelty) and none since have had the extent of line offered by the Chicago maker. Their products commanded the arcade industry for half a century, and the vintage machine population surviving into the present era is dominated by Exhibit Supply examples. The secret to their success was variety. They made virtually everything an arcade could offer.

Right down to small countertop tests, games, and fortune tellers and combinations of same. The 1938 LOVE METER (which lasted until World War 2, soon dropping the prefix "1938") is a classic example. It was one of three similar machines made at the same time, all models of the same basic machine, called LOVE METER, DISPOSITION INDICATOR and PERSONALITY INDICATOR. They were known in the trade as "flash machines" operated by batteries as amusement devices to "...indicate your personality or your ability as a lover, or people's opinion of you," to quote from an arcade guidebook. The question was, how to make them interesting and avoid the same answers to the same questions all the time. The solution was the Exhibit "gripper." Looking like the grip of a shock machine, but having no electricity, the gripper variegated the impact of the turn-on switch. That meant that the way a player grabbed the grip would have an influence on the results, thereby personalizing the responses. In explaining this concept, Exhibit Supply noted that "Most Exhibit machines could be operated by just dropping a coin but then the player would say to himself that if any other person had dropped in a coin, the machine would have given the same card or the same answer. This would ruin the 'take' of the machine, Therefore, on nearly all of the Exhibit machines you will see our famous gripper which sets the machine in motion after the coin is deposited. This gripper makes each player's play an individual operation. To prove this, I simply ask you to watch the people who play our machines. Watch the expressions of their faces; also watch the way the take hold of the gripper — some lightly and some grip on it with all their might — some give it a quick squeeze and other people will hold on until the machine has completed its operation."



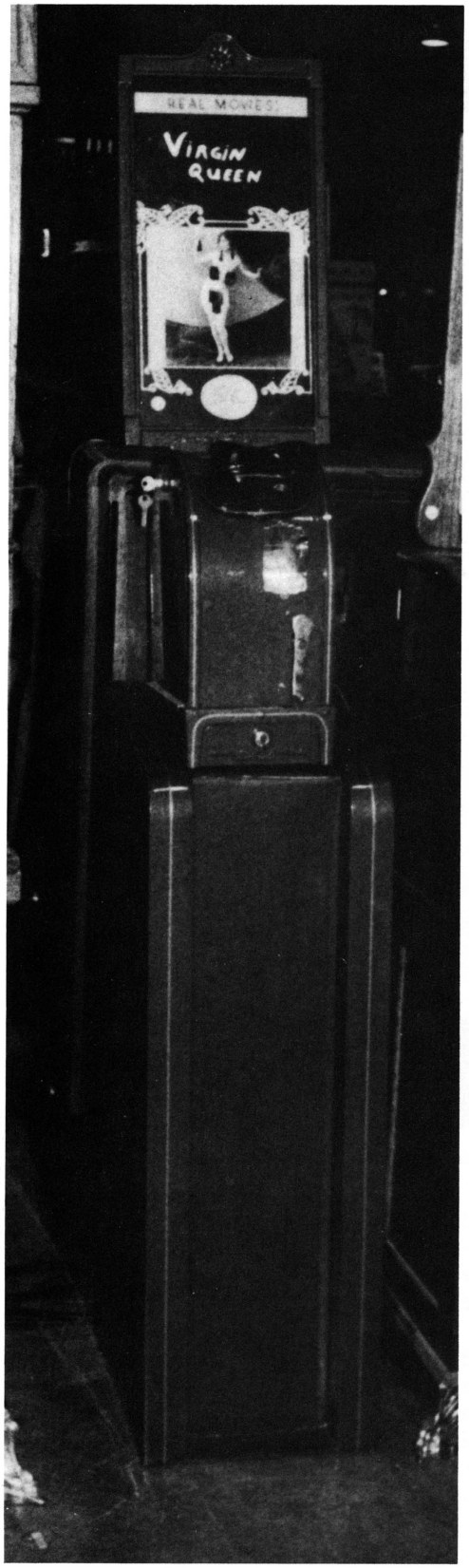
Richard Wiley Collection.

In operation, the 1938 LOVE METER could be a stand alone, or ganged with the other two machines on a base it was called THREE LITTLE METERS. Each were called "New, novel and original. No electric shocking. No grip testing. No current plug-in necessary. Joy and fun is the big come-on to pour pennies into them. The smartest money getters ever produced for your counter spots. 100% legal. Operated anywhere." The function of the 1938 LOVE METER was to measure "...the sex appeal of the patron," an ever popular arcade machine theme. Operation was by a dry cell battery, so an electrical outlet wasn't needed. Alone, the machines sold for $29.50 when they came out, or $88.50 for all three, plus an additional $20 for a base. 12 answers per machine gave you a lot to consider, but the rub is all the grip did was light the next light in sequence.

International Mutoscope Reel Company, Inc.

DELUXE MUTOSCOPE (MOVIE MACHINE) Pedestal Peep Show

1939-1949



Steve Gronowski Collection.

As an arcade device, the MUTOSCOPE peep show seemed to go on and on and on. For 60 some years, the only real changes were cosmetic, so the machine keep coming back looking different each time. But under the skin not much changed. It couldn't, for the reels didn't change one iota over the years except for content, so it took the same machine to spin it in 1899 as it did 40 years later in 1939, and 20 years after that.

The trick was to appear to make things look newer. And that was no small trick given the size and shape of the viewer. So International Mutoscope tried a new approach. They gave the machine a new name. In January 1939, with a great deal of fanfare, they announced their new MOVIE MACHINE, and pushed the machine into the front spot in their booth at Chicago's Sherman Hotel for the annual coin machine show. The announcement ad was an artistic triumph, practically all white space and a glowing sun with the brief copy: "The Dawn of a New Era in Coin Machine Operation. MOVIE MACHINE by Mutoscope." Modest, eh? The copy went on: "Ready to go to work for you in all locations! A complete library of top-notch subjects is immediately available, so operation can begin at once. Be sure to visit Booths 2 and 3 Sherman Hotel and investigate the tremendous possibilities of Mutoscope's low-cost MOVIE MACHINE — or write for full details toady."

When Bill Rabkin, the guy that ran International Mutoscope, was interviewed at the show he carried on the subterfuge: "Our new MOVIE MACHINE is the result of a careful survey of the coin machine field and its needs. We have felt for some time that something entirely new, yet filling a real need, was the answer to an industry that is in a dire need of a BIG IDEA. The MOVIE MACHINE is destined, we believe, to become the basis for major operations throughout the world." Big talk! But the coin machine trade press sounds exactly the same today, half a century later. The search for the BIG IDEA is still endemic to the industry.

In defense of the trade press, then and now, they tried to live with Rabkin's comments and add a note of reason and clarification by saying: "Operators are familiar with the early models of MOVIE MACHINES, which were commonly known in those days as the MUTOSCOPE. In fact, the International Mutoscope Reel Company got their name from this very machine. A new type MOVIE MACHINE, which Mutoscope has on display on the show floor, is the result of more than 35 years experience in motion picture business, as well as the general amusement machine business. Newcomers to the field who are not familiar with the MUTOSCOPE and other machine of their make will get some idea of the years of experience in the precision construction of the MOVIE MACHINE. This strictly automatic unit has been the source of great revenue for hundreds of operators." It sure has! For under the new modernized skin it was the same "Tin Mutoscope" mechanism of years back. After a bit, they gave up the new name and just called this model the DELUXE MUTOSCOPE.

Holly Engineering Company
UNIVERSAL GRIP Counter Athletic Machine
1939-1941

With all the big makers in the business – Exhibit Supply, International Mutoscope and others – it would almost seem there was no room for the entrepreneur and small producer. But that was hardly the case, particularly after 1938 when small makers boomed. It had taken that long to really shake off the effects of the Great Depression. But once hope re-entered the marketplace, small producers proliferated. Usually all it took was a man with an idea who was persuasive enough to interest someone else in putting up the money. And with that a business was born.

In the case of the Holly UNIVERSAL GRIP the man was Edward A. Gorney of Holly, Michigan, about 30 miles north of Detroit. Gorney was an old coin machine hand who had a lot of contacts in the trade, and they put in the cash. The July 1, 1939 issue of *The Billboard* announced the new firm: "A new coin machine manufacturing organization entered the Michigan picture recently, with the announcement by the Holly Engineering company of its new grip machine. The new grip is equipped with a handle that can be worked from any position. It is equipped for either counter or stand positions, and is finished in a Mohawk crackle red. A coin chute designed so that it cannot be plugged up is an important feature of the machine. Other coin-controlled machines will be added to the line later, it is understood."

Except that never happened. The Holly, Michigan site didn't pan out and the machine had problems. So it disappeared for a while, returning the following spring. This time it came back as the IMPROVED UNIVERSAL GRIP SCALE made by the Holly Manufacturing Company. The company had been reorganized, the plant in Holly had been enlarged, and sales offices were opened at 2761 Union Guardian Building in Detroit. The newer model added a marquee, and was described as available in a "Beautiful red crackle finish, all chrome front, rotary grip handle, plug-proof chute, holds $20.00 in pennies."

In describing the new model, the Holly Manufacturing Company sales literature states: "We have recently perfected new dies which produce a much sturdier inside operation. The new UNIVERSAL GRIP SCALE is designed for amusement and entertainment only. Tests the strength of grip. Check up on your grip daily for a penny. It is strictly non-gambling – therefore legal everywhere. It is also non-vending. Operators are making big money...using a variety of locations, such as cigar counters, beer taverns, cocktail bars, restaurants, dairy bars, road-houses, amusement parks, hamburger stands (Note: See, America had fast foods long before McDonald's and the others! White Castle was around for years), country hotels, country stores, grocery stores, gas stations, drug stores, confectionery stores, pool rooms, beauty shops (Note: They gotta be kidding!), barber shops, boy's clubs, gymnasiums, railroad and bus waiting rooms, and other locations which practice and experience have found profitable." And the company made another machine, too,until the coming of World War 2 ended it all, never to come back after the war.

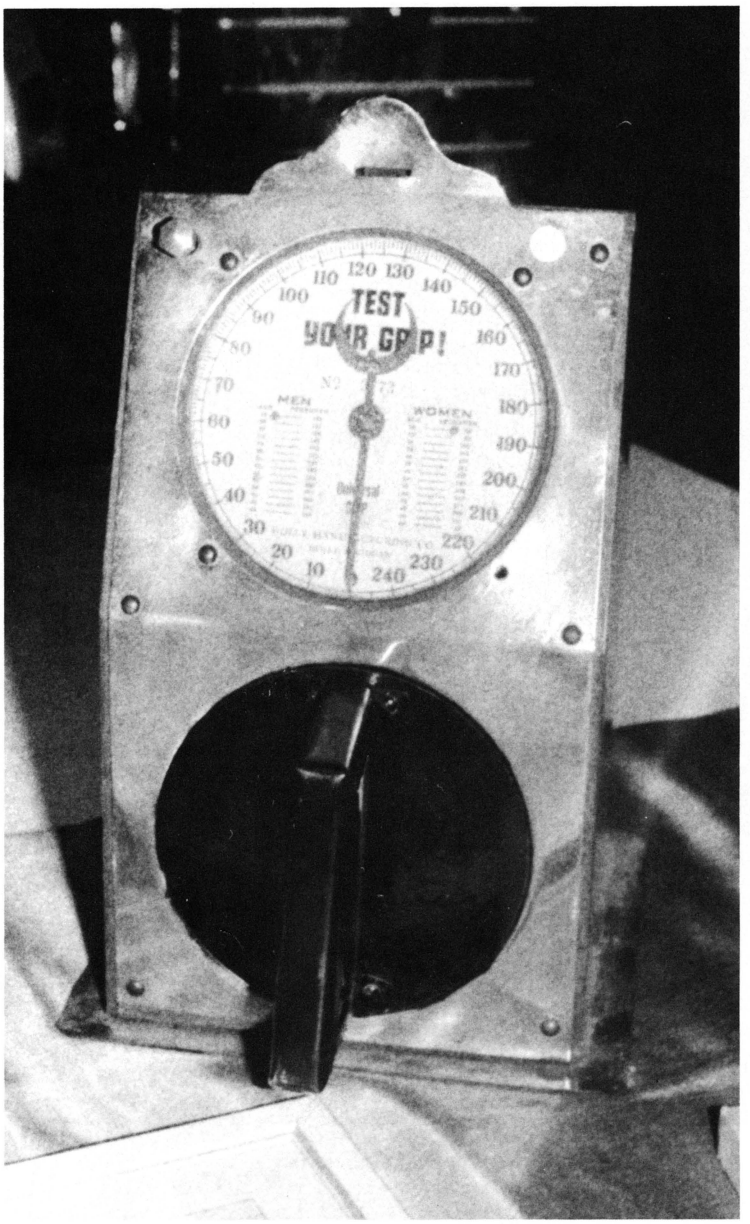
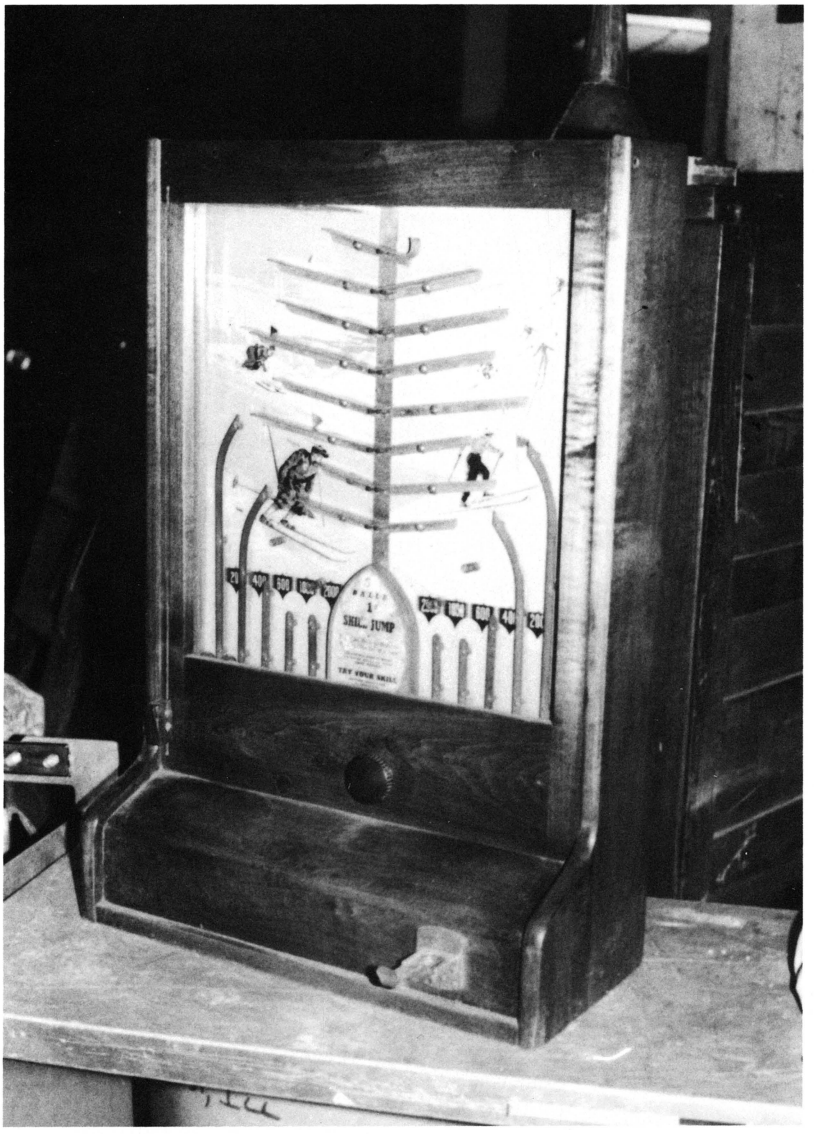


Photo by Dick Bueschel.

Groetchen Tool Company

SKILL JUMP Counter Amusement Machine

1939-1942



Allan Pall Collection.

There was a certain appeal to the legitimate game that attracted a lot of machine makers. For one thing the market was always open, although the quantities were never as high as the gambling machines. But it took a lot of machines to make a line, and with everything contributing something to the bottom line that's how companies (and profits!) were built. So just about every coin machine maker had one or more machines in the arcade class, whether they were classic floor model machines or just clever countertop games.

The Groetchen Tool Company SKILL JUMP was both. Completely unique — a variation of the old Jacob's Ladder game — it came in both console (on a base) and countertop models. It was the second arcade type machine made by the firm (a much smaller gumball vender of 1938 called BLUE BONNET was first), itself a coin machine old timer going back to the teens and twenties. Groetchen's main line was counter games and a small size payout slot called the COLUMBIA, so the SKILL JUMP was a major deviation from line. When first shown at the coin machine show in 1939 it was described as "...a novel upright machine with hinged levers to manually maneuver metal balls into scoring position. It is a test of nerves and has a come on that is hard to resist." In simpler terms, it is a nothing mechanism combined with clever graphics that is a lot of fun to play because it is a neat idea.

It was at that trade show that Groetchen's SKILL JUMP established itself as a hit game. A show reviewer, who was there, said; "The new SKILL JUMP game, which might be termed the first successful vertical marble game, held crowds from opening to closing hours. A number of well-known jobbers and operators evidenced their high hopes for this game with substantial advance orders, after having witnessed the tremendous player enthusiasm which was manifested. SKILL JUMP has a number of inclined surfaces — manually controlled by player — down which balls must roll before they can enter scoring pockets. Judging from the crowds, it looked as if the onlookers got as much fun watching the antics of the ball as the player himself."

Groetchen apparently showed two versions at the 1939 show, only one of which made it to the marketplace: "Groetchen has done a swell job in designing the new SKILL JUMP which was shown in two models, one with a colorful ski-sport background, the other with an ornamental playing field called BALANCE THE BUDGET." When it came time for deliveries only the skier version was cranked out, in both the console and counter models, There were a few variations, "available in straight nickel or straight penny play, or combination penny-nickel-dime chute; last coin is shown. May be operated with 8 balls or any lesser number of balls best suited for your locations."

Popular when it first came out in 1939, with production running out in 1940, the game was brought back briefly in 1942 before the wartime manufacturing restrictions ended any future fabrication. It was perfect for the times, as reported in the trade press: "Players are all on edge because of war conditions, and get off a great deal of steam by playing at these intricate games." More than likely they just got frustrated as hell.

Exhibit Supply Company

ASK ME ANOTHER Counter Information Machine

1939-1941

Take a step back in time if you will (one way is to thumb back 34 pages) to the Exhibit Supply ORACLE of 1922. A landmark machine, that. It was the chance element that made the ORACLE readings so exciting. Fate certainly did have something to do with it as the answers certainly weren't programmed (and the players wanted to accept the possibility of random). So when the small countertop Exhibit Supply fortune tellers found a whole new audience through modernization, the ORACLE was up for re-do. It became the basis for the ASK ME ANOTHER line.

The machine is called a line because of its various marquees and front glass panels. Each one had a different name, and 15 questions in bullets around a circle, with two circular windows in the middle for the yes/no answers. The front glass copy says: "Deposit 1¢ in slot. Turn knob to your question. Push button and watch for answer." It was that simple, and an ORACLE reincarnate. The big difference was electricity. Where the earlier machine had a yes/no flag in a window the much newer ASK ME ANOTHER project the answer in the light box windows of the front center. It was eerie, and interesting, and you had no idea what would come up next in answer to your questions. That is the power of the machine, for it has a mind of its own which the player can't control.

ASK ME ANOTHER came in a variety of models, and could have gone on forever and ever. Exhibit Supply's ASK ME ANOTHER ... ABOUT FORTUNE, a fortune teller version, was a direct takeoff of the original ORACLE. The version shown, ASK ME ANOTHER ... ABOUT MONEY was one of the lesser known models, and there may well be many others that have never even been identified. During the World War 2 years models related to the hopes and fears of its servicemen (and women!) players, many of whom kept playing until they got the right optimistic answers. Fate said it, right?

The ASK ME ANOTHER was sold singly, or in groups of two on or off a base cabinet, the latter making it a typical arcade floor machine. In describing this model ESCO (short for Exhibit Supply Company, usually placed on a machine in the form of a cast aluminum plaque) literature states: "Player deposits coin in slot and turns knob slowly until the question is lit up, which he would like answered. He then pushes the button and the answer is flashed, YES or NO. There are 15 questions about FORTUNE and 15 about LOVE. Genuine A.B.T. slot. Well designed mechanism. Built to give long service. Operates on 110 volts 60 cycle A.C. current. Cabinet measures 22" high without top sign, 15" wide, 10" deep. Shipping weight, 2 machines 75 lbs. Shipping weight, base cabinet 60 lbs. Price battery 2 machines, Chicago F.O.B. $75.00, complete with base cabinet, $95.00." The man that seems to have done the design work was, once again, Perc Smith, by now heading the ESCO Arcade Division (with the firm also making pinball games and automatic payout consoles in addition to arcade machines) 17 years after his original ORACLE hit the streets.



Steve Gronowski Collection.

Exhibit Supply Company
CRYSTAL PALACE Floor Digger Machine
1939-1941



Steve Gronowski Collection.

The growing success of the Exhibit Supply line – pinballs were a particularly successful venture, although the gambling machines flopped – meant that the firm had some unassigned seed money. And that meant they could hire some highly skilled people to just hang around and create new machines while they also updated the existing ESCO line. The results were legendary, although short lived due to the interruption of World War 2 and its manufacturing limitations. But in a way Exhibit Supply was lucky, for they did more redesign and new model creation in the waning months of 1939 and throughout 1940 and 1941 than they ever did in any other two year plus period in the firm's history, and that included its big arcade line boom in the middle 1920s. It is probably true that if Exhibit Supply had not done this the firm and its lines would not have survived World War 2 and staged a comeback after the war. Even so, some models were lost along the wayside, and the CRYSTAL PALACE digger was one of them.

Its origins go back four years before its appearance, and to an electrical engineer from Indianapolis, Indiana, named Edward E. Collison. A latecomer to Exhibit Supply after years of juke box design at the Capehart Corporation, Collison embarked on a flurry of original design. Out of it came a landmark digger called the PATHFINDER of 1935 that finally made it to production as the ROTARY MERCHANDISER of 1937. Further development created the NOVELTY CANDY VENDER. With that base in-house, and the desire for a new digger a high priority, the project passed to the next high powered engineer. Edward J. Collins (who had a very similar name to Edward E. Collison, to the point where they were often confused) was widely experienced in coin machines in the highly creative southern California market, and was brought into Exhibit Supply by Claude R. Kirk. So now he put his hand to the digger to create the most advanced model to see sales and service before World War 2. Collins even got a Design Patent on his approach (Design Patent DE 113,218, "Design for an Amusement Machine Cabinet," Patentee Edward J. Collins, Chicago, Ill., assignor to the Exhibit Supply Company, Chicago, Ill., a corporation of Illinois, application filed November 26, 1920, patented February 7, 1939).

The sales literature describes the result: "CRYSTAL PALACE digger. Newest. Finest. Most beautiful. Exhibit pioneered the digger business – has made thousands of successful merchandiser machines, but never before have we offered customers a digger to compare with this new model. We furnish the CRYSTAL PALACE with the following exclusive features, 1. Regular model with rollchute delivery, 2. Model with mirror covering chute opening 'buy back plan,' 3. Replays register – value of merchandise taken as replays or redeemed in trade (Note: Making it a gambling machine!), 4. Candy vender attachment — gives fixed amount of candy each time. The beauty of design must be seen to be appreciated – a large back mirror reflects all merchandise and doubles the flash of the layout." With all that going for it, and the highly visible prizes that seemed to be more than were actually there due to the mirror, the CRYSTAL PALACE was perfect for center placement in an arcade.

Exhibit Supply Company
MONARCH MERCHANDISER Floor Digger Machine
1940-1942

The MONARCH was the end of the line for pre-war Exhibit Supply digger design, and really wasn't much more than a cabinet redesign to give a new look to an existing mechanism. Having said all that, and running the risk of having the machine sound mundane, the MONARCH MERCHANDISER (its full name) is both unique and in short supply. It is quite likely that the machine was a lash up cabinet design for a major arcade or route sale, and then became the wartime revamp cabinet for all old and refurbished NOVELTY MERCHANTMAN mechanisms taken in and played back to the marketplace.

It is clearly of the NOVELTY MERCHANTMAN class. It has the crane and the ship's bow, but it doesn't have the large merchantman superstructure of the original machine, more than likely to save on critical materials and metal needed for the war effort. It also has a newer version of the "Roll Chute" vending bin, a large boxy structure that replaced the smaller vender in the middle 1930s because the earlier system suffered from clogging. In the case of the MONARCH MERCHANDISER a whole new front structure is used, with the machine name cast into the aluminum component, a casting that could not have been produced in quantity during the war years as any and all aluminum was fed to the military aircraft industry. The obvious conclusion is the creation of an oversupply in order to get through the four years of war (or scab production during the war years utilizing the metal on recycled machines, something done by other coin machine makers, but probably not by Exhibit Supply).

Exhibit Supply called their pre-war NOVELTY MERCHANTMAN "the best digger made." The claim wasn't unreasonable, for the "NM" was relatively low in price and high in content. Factory reconditioning of the model started back in 1935 as whole arcades were re-equipped with newer models while the older versions were upgraded,usually with mechanism clean-up, the roll chute and a new cabinet. The original machine was boxy, evolving into an Art Deco cabinet late in 1934 as the 1935 NOVELTY MERCHANTMAN, with yet another cosmetic change in the moderne styling as the "Streamline" NOVELTY MERCHANTMAN of 1935. It is this latter machine that seemingly inspired the MONARCH MERCHANDISER for the cabinets are very similar with the exception that the later model has nowhere near the mass of aluminum on the front. And that may have been Exhibit Supply's captive source for aluminum, for the "streamline" model had it from top to bottom, and wide, across the front of the cabinet. Take it off and you practically have the MONARCH, although in the dark the latter still looks more like a phone booth than a digger.



Steve Gronowski Collection.

The MONARCH MERCHANDISER was never advertised, nor was it included in the wartime lists of available machines. No flyers, direct mail pieces or price lists have ever been found, which is unusual as the Exhibit Supply machines are well covered in surviving literature. That suggests that it was a "special" or, as earlier envisioned, a clandestine wartime machine offering that no one wanted to talk about very much.

Exhibit Supply Company

1940 PERSONALITY INDICATOR Counter Information Machine

1940-1948



Steve Gronowski Collection.

The Exhibit Supply 1940 PERSONALITY INDICATOR is another re-do machine, but this time the whole idea was widely broadcast and promoted. The original model was very much like the 1938 LOVE METER of 7 pages back, with a PERSONALITY INDICATOR model of the earlier machine setting the pattern for its rejuvenation. A countertop grip switch flasher like its forebear, the 1940 model had a lot going for it beyond a mere facelift, which explains why such a substantial change was made in only 2 years.

Given the fact that the Exhibit Supply flash machines were very popular, the fact that they only indicated the next light in line was a deterrent to long term play. The more you pumped coins into the 1938 version the quicker you learned that the next coin lit the next light. What was needed was some chance theory and randomness of answers. So it became a primary project. Charles A. Solinski of Chicago, another one of Exhibit Supply's high priced contract consultants and engineers, solved the problem in little more space than was needed for the original machine, and he did it with electricity. The result was an electromechanical mechanism that owed more to automatic payout console technology than to switchgear. Solinski's prototype machine was a countertop called WHEELS OF LOVE in which a spinner light rotated behind a circular wheel window, finally lighting on one of the wheel segments to illuminate the copy behind it. Solinski's patent identified the action as "...a device arbitrarily indicating a certain objective to the amusement of the user" once a coin was dropped (Patent No. 2,342,018, "Game Apparatus," Patentee Charles A. Solinski, Chicago, Illinois, assignor to The Exhibit Supply Company, Chicago, Ill., a corporation of Illinois. Application filed December 14, 1942, patent issued February 15, 1944).

Once the electrical chance apparatus had been worked out for a wheel flash it was no major trick to convert the viewing to vertical columns, leading to the 12 questions in 2 columns on the 1940 PERSONALITY INDICATOR. Put in a coin, squeeze the grip, and the contact rotor inside starts a spin that randomly stops on an answer, so the players never know what they're going to get. And that put the PERSONALITY INDICATOR back into business. The older model was still being sold to be sure, but the newer version has a lot more happening under the hood.

Three models of the vertical answer format were created: 1940 PERSONALITY INDICATOR, 1940 LOVE METER and 1940 DISPOSITION REGISTER. All could be purchased separately, or gauged into a group called THREE LITTLE METERS on a cabinet base with an enormous marquee on top that said: "How do you impress people. Let these meters tell you." In describing how each of them worked, ESCO said: "To operate: Deposit coin and squeeze handles. The machine then automatically completes the play, stopping on the answer, which always gets a laugh." They also generated a little fear. The market was so conditioned to the grip switch, the machines continued to carry a disclaimer, saying: "No Electric Shock."

Exhibit Supply Company
SMILING SAM Floor Information Machine
1940-1942

Some machines are collectible for their plain good looks. Others for their age and technology. The Exhibit Supply SMILING SAM is that rarest of all, the machine that is eminently collectible for its social statement. Not that any attempt at a social statement was made when the machine was introduced. Quite the contrary. It is the ordinariness of the machine that makes it stand out, for this is that unique segment of Americana that is known as "Colored Art." Its impact was based on a stereotypical graphics approach in which an African American is depicted as an eye rolling, teeth flashing ne'er-do-well awed by spooky doings, a sort of down South approach to a "boxed lady" fortune teller.

Except this wasn't a mannikin in a box, but just a 2-dimensional illustration of a man on the face of a cabinet with animated features, a sort of poor man's DORALDINA. And the machine didn't vend fortunes, in their stead offering a "...lucky charm pocket piece." In short, SMILING SAM is nothing more than a gussied up card vender.

SMILING SAM, with its subtitle "The Voo Doo Man," was the perfect arcade addition at the start of the 1940s. The old Exhibit Supply Card venders had been around since World War 1, and while other approaches centering around romance and fortune telling had been issued over the years there was always need for a new approach to selling pieces of cardboard for a penny. Thus the creation of the "...lucky charm pocket piece," a small printed piece of card stock with a good luck horseshoe on one side and a witty saying or magic incantation on the other. It was all supposedly in good fun, with no thought given to the oppressive image of the black man as a lower socioeconomic member of society. That in itself is part of the appeal to well-to-do or even middle class African American collectors who like things that remind them how far they've come in just two generations. It is stunning proof of the changing American Dream.

The contemporary machine literature says: "SMILING SAM. Everybody wants to play it. He's the Voo Doo Man. His face moves — rolls his eyes — shows his Teeth — gives a big happy smile. He fascinates them all, big and little, young and old. And, to each person he gives a Lucky Pocket Piece — on one side is a good omen horseshoe, and on the other side, words of magic charm. There are 32 different Lucky Pocket Pieces printed on assorted colors of cardboard and each time the machine is played a different pocket piece is vended. Mechanically, the machine is trouble proof and built to last a lifetime, as it is operated electrically and all wire connections are soldered for permanency. Equipped with A.B.T. slot, easily removable with cash box door. Large handsome cabinet finished in silver bronze and ornamented with bright colors. Important Feature — Brilliant Flashing top sign that attracts everybody's attention." You could get SMILING SAM on a base, as shown, or as a countertop for $5 less that its original $135 selling price.

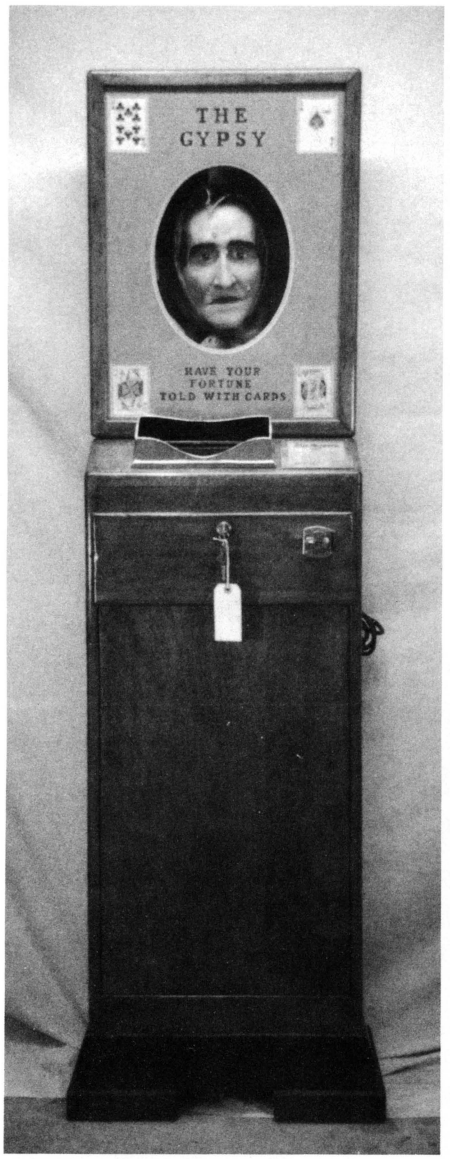


Larry Lubliner Collection.

Crabb Manufacturing Company

THE GYPSY Floor Fortune Teller

1940-1942



Bob McGrath Jr. Collection.

Coin machine trends are easy to spot. They come in rushes. What is sometimes more difficult to determine is who started it. Did, for instance, Exhibit Supply's SMILING SAM start the trend toward depictions of boxed mannikins, or was it someone else? Perhaps it was Chicago's Crabb Manufacturing Company, for example. Now there's a company name we haven't heard before in connection with arcade machines. There's a logical reason. It didn't exist as an entity before 1938, although the original firm went back a few years to the early 1930s.



Charles Diebel Collection.

The Operators Supply Company, Inc., was located at 4311 N. Lincoln Avenue on a light industry and sales rep stretch. Company president J.M. Hayes had built up an enviable business as the exclusive or semi-exclusive distributor of a wide number of coin machine products, a position he couldn't jeopardize by becoming a competitive machine producer. But he could subsidize such an effort behind the scenes. Among his sales and maintenance staff was a young coin machine designer named Earl L. Crabb, who quickly set up as the Crabb Manufacturing Company at the same address. What Crabb proceeded to do was develop a long line of fortune tellers, starting around 1936 under the old company name, gaining steam by 1938 with the producing company now under his own name.

Success with a major machine called the ASTRO-SCOPE, and later the QUESTION GIRL, got the venture off and running. It was the latter that seems to have started the trend toward smaller, partial or flat figures in fortune telling machines. It also set the pattern for the upcoming THE GYPSY. Where the prior machines had a technological or friendly look, THE GYPSY was absolutely spooky. That came from its severed head look. The "Grandma" was 3-dimensional alright, but only the head floated in a dark limbo background. Worse, the face looked only too real. And why not? It was modelled after one of the leading psychics of the day, an ancient looking lady named Murial Austin Starr. And it worked. Her eyes were so penetrating it scared people. And that curtailed play.

After about a year the machine was yanked. Its name was changed to GYPSY CARD READER, the cost to play was added (1¢ or 5¢), Murial Starr's eyes were tilted downward a bit to avoid the overly scary stare, a paisley headband covered her high forehead and the lightbox background was lightened with playing cards added to further explain its action. And this time the machine took off. It is clever. You push in your money, and lights around the face begin to flash. You almost expect that head to speak. Then you look through the viewer and, floating in space by means of Magic Mirror projection, you see 5 playing cards and an explanation of your fortune. Play again and the cards change. The cards are actual size, so they look to be dealt for you and you alone. Yet throughout it all it's that face that commands attention. Somehow the head alone is more attention getting than the full-figured boxed lady fortune tellers. The machine was made into 1942 until wartime restrictions curtailed production. At least one has repair dates of 1943 inside. International Mutoscope also cataloged the device, so some people believe it is a Mutoscope machine. It isn't.

J.H. Keeney And Company
AIR RAIDER Floor Target Game
1940-1942

Ah, the war years. They were wonderful years for the arcade business for troops were being moved all over the country all of the time — troops, that is, from the Army, Army Air Corps, Navy, Naval Air Service, Marines and all sorts of other things like the Coast Guard, Merchant Marine and Allied forces — and eventually ended up in arcades a lot when they were in strange towns because they didn't know where else to go. And everybody became a killer at heart. Gun Games, a class that had gone out of favor years before, were suddenly hotter'n hell. And the J.H. Keeney And Company of the south side of Chicago sat on 2 or 3 of the best of them.

The Keeney guns owed a lot to the electric eye gun games of the middle 1930s made by Rock-Ola, Bally, Seeburg, Pacific and a few others, including Keeney. But they were largely shoot-the-duck sporting themed games. It fell to Keeney (and to International Mutoscope, covered in another volume) to change the targets to something more warlike. It started with Keeney's ANTI-AIRCRAFT MACHINE GUN created by Melvin J. Binks of River Forest, Illinois. Binks was a true electrical coin machine wizard (he later had his own firm) who conformably designed pinball games, electrical payout consoles, cigarette vending machines, and the Keeney electrical eye guns. The ANTI-AIRCRAFT MACHINE GUN went through a few upgrades until, in a major design leap, it became the AIR RAIDER, issued the second week in October, 1940. It was a runaway success! The Keeney announcement tried to explain its uniqueness, with: "we are making available a new sensational gun that will prove to be the biggest moneymaker of them all. It's something that operators and players will all like. Most important, it's a game that has completely new appeal. It's a most unusual gun machine. Many features incorporated on AIR RAIDER will make it the game that will really keep operators on the profit side of the ledger. The biggest feature of Keeney's new AIR RAIDER is the fact that it is a completely self-contained unit."

And there it was, in that last line!

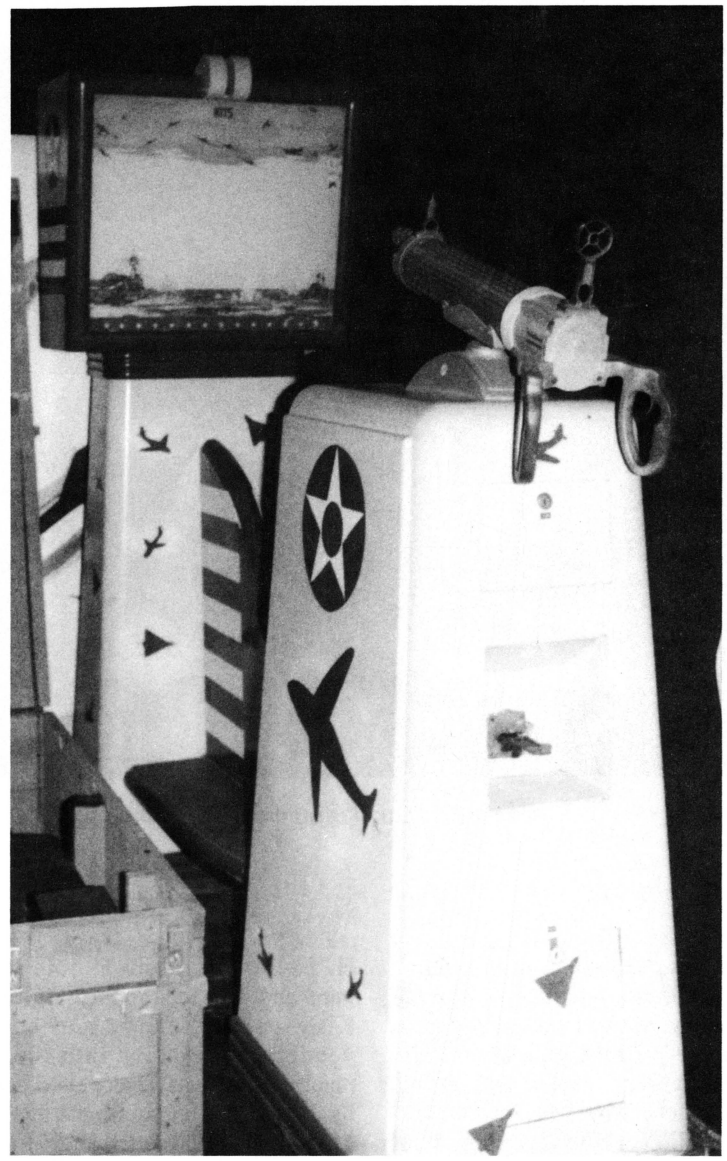


Photo by Dick Bueschel.

All other electric eye gun games had 2 pieces connected by wires, and often stretched too long or confused the players. But AIR RAIDER was all in one piece and had no touchy photo-electric cells or amplifiers. A big piece! But one. And that gave a lot of room for graphics, with U.S. air insignia of stars-and-bars all over the cabinets over a neutral gray background. The machine was downright patriotic, and pulled the players in like flies. Not only that, it was exciting. The far target area is a naval battle, with warships below and aircraft above. And, once war came the end of the next year, the battles looked just like that. That made AIR RAIDER an early simulator.

The game was advertised as a "Self contained machine gun. No screen. The greatest attraction ever devised, all in one unit." The screen, only it wasn't called that, was a fixed focus light box that threw airplanes into the air space to shoot at. The final accolades came during the war years when various makers produced conversion kits to make AIR RAIDER into NAVY BOMBER, the "Shoot your way to Tokyo" supreme gun and others. They're rarer.

Automatic Games Company

ELECTRIC DEFENSE GUN Counter Shocker Machine

1941-1942



Larry Birnbaum Collection.

You ask, "But what does it do?" ... and who wants to spend money just to hear some dumb gun go bang?" Brace yourself. This thing isn't what it appears to be. We've come a long, long way from the counter shocker of old. Yet here it is again, in a new wartime garb.

Only the war years would have bred such a hermaphrodite. It looks like one thing, while it is really something else. The panel on the side of the machine gives it away. It says: "ELECTRIC DEFENSE GUN. Only 1¢. Harmless. Fun - Health. Hear it! See it! Fire it! Put it in action only 1¢. Can you do it? 1 - Insert penny. 2 - Hold both knobs. 3. Turn right knob to elevate and fire." And that was it. A shocker true and through. An old idea by a fairly new maker. Its manufacturer, Automatic Games Company of Chicago, entered the market place at the end of 1940 with a peep show called the VIEW-A-SCOPE. The firm's founder, H. F. Burt, was an old coin machine hand and long the producer of the Silver King peanut, candy and ball gum venders. The move into the arcade machine area was a calculated extension by Burt in order to stretch his line of offerings. The introduction of the ELECTRIC DEFENSE GUN solidified the extension by positioning Automatic Games as a producer of a totally unique product with literally no matching competition. You either liked the ELECTRIC DEFENSE GUN or you didn't. But if you did, there was only one place to get it.

Burt didn't jump into the production of the machine; he tested it at length before committing to its manufacture. A press release sent out at the time of its introduction in the summer of 1941 said: "Production has started on the latest, most up-to-date item that has been introduced for months. The ELECTRIC DEFENSE GUN dispenses fun and health for young and old for 1¢ or 5¢. Tested for months, with elevating gun, flasher light, self–starting induction coin, and six volt stand and lantern battery to give plenty of power and long life. It is heavy enough so it cannot be knocked off the store counter. Advance orders lead us to believe the ELECTRIC DEFENSE GUN will be on of the outstanding '41 money makers – both for arcades and all amusement and tavern stops.

"It's a strictly legal machine that never grows old. It's a natural for the present period, and will take in more than its share of the defense money spent by soldiers, sailors and workers in amusement centers and arcades throughout the nation. Old timers in the know say, 'The ELECTRIC DEFENSE GUN is the greatest machine of its kind we have ever seen and will make plenty of steady profits for years to come'."

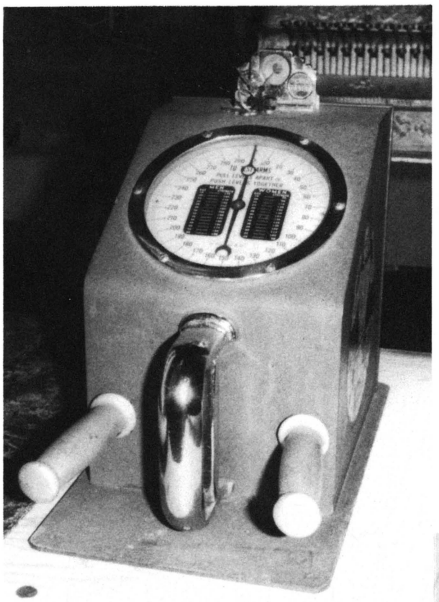
Except it didn't. For all its fanfare and its claim to be "A year in the making, tested for months, a legal money vender that will last longer that you'll ever operate," as noted in its sales flyer, the machine apparently flopped, if the surviving numbers are any clue. For there aren't a lot of these things around. A trickle tickle, an elevating gun and a glowing barrel tip seemingly wasn't enough to turn on the "defense" crowd, so the gun languished, surviving now as a period piece.

D. Gottlieb And Company

IMPROVED DELUXE GRIP SCALE Counter Athletic Machine

1946-1950

Say the name Gottlieb to anyone even slightly understanding of coin machines and pinballs come to mind. In the thirties, forties, through the fifties and into the sixties it was the dominant name in this most American of games. So much so it all but blotted out the fact that D. Gottlieb And Company started out as an arcade machine producer (and ended as one, with its MACH 3 video game all but putting the firm out of business) and, as its backup line, made arcade class machines throughout most of its almost 60 year life. In fact, the firm's first machine was the HUSKY GRIP GAUGE, a counter top grip test created in 1927 by David Gottlieb based on another machine he had seen in Texas where he was an operator. So he moved to Chicago, had the device re-engineered for production, and entered the coin machine manufacturing business. For the next 30 years, either because he had a market niche, or out of loyalty to his first product, Dave Gottlieb made grippers.





Photos by Dick Bueschel.

When World War 2 ended once again a grip test was the first Gottlieb product. D. Gottlieb And Company took their latest pre-war model and upped it as the IMPROVED DELUXE GRIP SCALE, nicknamed the "3-Way Gripper." 3 what? Test, of course. A grip test for the hands, and two tests for the strength for your arms, push and pull. Not only that, it has "Button Indicator Control" if you want to set up a competitive situation between you and some other guy. Push a small knurled button right below the coin chute and the indicator is freed for the next player to meet, beat or suffer defeat when the scores are compared. The Gottlieb IMPROVED DELUXE GRIP SCALE also rang a bell, but here the operator could get into the act. The bell was easily re-set to ring at any number desired, so the operators had the option of having their patrons appear to be wimps or musclemen. Or women. Charts on the face of the machine listed theoretical grip strengths for both men and women, based on age. The operator could also fold or mold the ego potential of the players by adjusting the tension on the grips. As for movement under all that stress, six rubber suction cups kept the game on the counter, provided it was on glass. Otherwise funny things happened. Many a gripper was blown across the floor while they were squeezing hard and the machine suddenly let go.

The Gottlieb grippers, after their initial introduction, were always an adjunct to the line. When the IMPROVED DELUXE GRIP SCALE was introduced at the end of May, 1946, it was advertised along with the Gottlieb STAGE DOOR CANTEEN pinball game, Gottlieb's first postwar game. When it was promoted at the end of the year, it was with the pinball game BAFFLE CARD. Shown at the 1947 coin machine show, it shared a booth space with MISS AMERICA and DAILY RACES. So while pinball games came and went, the IMPROVED DELUXE GRIP SCALE was promoted as "...made continuously since 1928, operated all over the world." The proof of its success is in its population. There are more of these vintage machines around than all of their companion pinballs combined.

A.B.T. Manufacturing Corporation

1946 CHALLENGER Counter Target Game

1946-1947



Ed Smith Collection.

What is there to say about the most popular arcade game machine format ever created? One thing is certain, they were produced in the tens of thousands, and it would seem that an enormous percentage of that number survived the years. Perhaps only the MUTOSCOPE (and later, PAC-MAN) surpassed its numbers, but that's unlikely. As a game format, the A.B.T. gun has no peers. It is the unchallenged leader.

The game came in a lot of forms and formats. All you had to do to upgrade was change the cabinet design and the targets. And just as quickly, you had a new game. Throughout the thirties, this happened every year or so, until there were half a dozed basic models by the time World War 2 came along and everything ended. Then, during the war years, all of American industry was asked to chip in their old tools, dies, jigs, patterns and what else have you for the many scrip metal drives. However, there was cognizance of the fact that a firm's proprietary patterns were as important to postwar survival as able management and financing, so the War Production Board and other government agencies turned a blind eye to back room inventories of critical production goods. So the patterns for many coin machine makers survived the war years in caches stashed here and there, in plants and in storage (Note: Some of these hidden assets are still being found. The pre-war A.B.T. patterns and dies were put on the open market in the middle 1980s while a major buy of Mills Novelty Company slot machine patterns, dies and jugs was made as late a 1990). So, when the war was about to end in a Allied victory, this stuff came out of the woodwork.

That's what happened at A.B.T. in the early months of 1946. Looking for all the world like the pre-war model, the 1946 CHALLENGER (along with the 1946 BIG GAME HUNTER and TARGET SKILL MODEL F) came back in the first peacetime spring after 7 years of World War 2's cruelty and economic suicide. But would a gun game make it in a postwar world, and didn't people want to return to the postwar pursuits of a quieter day? No way! War, for all its agony and cost, is exciting, and particularly exciting when whole nations and their civilian populations are involved. Painful as the thought may be, to many, war isn't hell. It's heaven. And with the postwar years upon the nation, many couldn't stage down. Younger people who missed their day under fire were nostalgic for an experience that never happened to them (although some would get their days of trial under fire 5 years later in the Korean War, deified by MASH). So the gun games had a rebirth of interest.

A.B.T. tried to temper the urge to kill enemies that no longer existed by making the 1946 CHALLENGER in a sporting theme as the same as the prewar model. But the selling copy kept up the old warlike prose: "Everyone gets a thrill out of using a real army type pistol. Together with an attractive cabinet, the CHALLENGER will astound you with its drawing power. The desire of one customer to challenge another creates more interest, constant play and enormous returns." Not mentioned was the fact that not a lot of people went out to shoot game birds with a Luger.

Marvel Manufacturing Company
POP-UP Counter Amusement Machine
1947-1953

Revamp. It was a word you heard a lot in the war years. It meant taking an existing coin machine by one manufacturer and making it something else by another. It gained a lot of favor during the war years because that was the only way you could get a new machine. You had to make it out of an old one, using "non-critical" material such as wood, paint and whatever as long as you didn't use up or tie up heavy industrial materials and facilities.

That's how Ted Rubinstein's Marvel Manufacturing Company at 2847 W. Fullerton Avenue — 12 blocks east of the Mills Novelty Company in Chicago — got started. Pinballs were first. And when the war was winding down to a successful conclusion, Marvel began making their own games from scratch. By the time the war was over, the firm was off and running, getting in on the new machine craze, including counter games and small arcade pieces. To everybody's surprise, and to their singular credit, Marvel came up with their own, unique games. POP-UP is based on that perennial favorite, baseball. While the inner workings are reminiscent of the Paupa & Hochriem baseball games of 30 years earlier (could their patents have been copied?), which had gone into public domain at least a dozen years earlier, the outside was a modernistic style that had not yet been seen, becoming an immediate part of postwar coin machine styling where much was not much more than a re-entry of an earlier pre-war model. That put Marvel Manufacturing in the forefront of postwar coin machine design, if only briefly.

Play is simple. Push in the coin, bring up a ball, bat it with the right knob while you try and catch that pop-up fly with a moving outfielder controlled by the left knob. It's like patting your head and rubbing your stomach at the same time. It's flyer says: "Marvel's POP-UP, the counter game that is legal everywhere. 1¢ play. 5¢ play if desired. Accurate competitive skill scoring. POP-UP is sturdily built — natural wood cabinet with polished chrome-nickel fittings. Highly finished rust-proof parts. Precision built scoring unit and fool-proof mechanism." It's distributors added the fact that POP-UP was in a "...beautiful two-toned wood cabinet,"



Paul Olson Collection.

a styling that showed up across a multitude of small arcade, game and vending machine cabinets for the next few years.

When it was first introduced in January 1947 it sold for $49.50. Distributors were discounting POP-UP at $37.50, and they must have had a hell of a run, for this game has survived in some numbers. By the end of the year, in December, the machine was in deep discount, with Chicago's powerful Atlas Novelty Company advertising their "Brand new Marcel POP-UP in original cartons. Now only $14.95 while they last. 1¢ play. Metered." By 1948, the Marvel POP-UP was all but gone from the coin machine scene, a one year machine that, while small and counter-top, made a big mark on the immediate postwar industry. True, the initial buyers would buy anything to get back in business. POP-UP helped them do it.

Bally Manufacturing Company
HEAVY HITTER Table Amusement Machine
1947-1948



Steve Campbell Collection.

Just because the Bally Manufacturing Company hasn't been featured as an arcade machine maker in the product listings to date doesn't mean they weren't an influential factor in the business prior to 1947. They were, and their gun games and bowlers had a great following. But it was in the postwar years that they really came into their own. And one single game has a lot to do with it: HEAVY HITTER.

HEAVY HITTER was Bally game No. 488, first seeing market light in the spring of 1947 with an official introductory date of February 2nd. Part of the charm of the game was its size — it's only 27" long and 15 " wide, or smaller than a pinball game. That meant it could fit on most counters, although a 4-legged floor stand was offered for arcade locations. The other charm is the pitched ball. You never knew when it was going to be tossed your way. You stand there, waiting impatiently, hand on the bat lever, and suddenly a trap door opens and spits a ball at you at high speed. Missing that ball and getting 3 outs in a hurry to end the game wasn't uncommon. But after a bit, and a few more games, you get the drift, and from that point forward you're pretty good. But that ball stills comes hurtling at you pretty fast, so you've got to be alert.

That's the final charm of HEAVY HITTER, because you can never be lazy. Pay attention and you'll have a fantastic game, with all the results displayed on a scoreboard. Don't, and you don't. So the game generated the loyalty of serious players and quickly became a classic in its genre. It couldn't have happened to Bally at a better time.

Actually, Bally was lucky, for it was a brought-in game. It's inventor was James L. Keller, a Ferndale, Michigan, cab driver who had worked it out during the war years. Keller's real invention was the pitching mechanism, in which "...a player actually batter at mechanically pitched balls," as quoted in his patent (Patent No. 2,530,526, "Baseball Game Apparatus," Patentee James L. Keller, Ferndale Mich., application filed on July 23, 1946, patent issued November 21, 1950) on the device. What Bally added was a timer, with their introductory press release of May 1947 explaining the game: "Game, smaller in size than the average pinball game, also can be operated with a floor stand. Play is based on baseball and can be played until three outs are scored or for a period of four minutes. Ball is pitched automatically from the pitcher's box, player swinging the bat by pressing a lever on the front of the machine. Scoring is accomplished by knocking the ball into various holes over the field. A duplicate diamond is on the backglass and lights 'run the bases' as hits are made. Game is designed for high score only with no free plays."

And what a game. Most other makers tried to copy it, but that patent blocked outright duplicates, so Bally maintained an exclusive advantage. It sold and just kept selling. 12 years later, Bally brought out a full size version.

Mercury Steel Corporation

DELUXE ATHLETIC SCALE Floor Athletic Machine

1947-1948

As a serious vintage arcade machine collector, you've seen it happen on these pages. If you're involved in the coin machine industry, you've seen it happen time and time again. Basic machine ideas recycle, and good ideas come back every 20 years or so, long enough apart so that the new players can't remember the old machines. Who knows, these very pages may inspire a new coin machine designer to recreate an older machine idea, and something old will become new again.

The DELUXE ATHLETIC SCALE by the Mercury Steel Corporation of Detroit is a classic example of this fact. If Rosenfield, the early 1900s Mills Novelty or similar period Caille Brothers, not to mention National and Peter Beetz, were still in business after World War 2, this is probably what their 3-way test (lift, grip, pull) machines would look like, for this is the turn-of-the-century lifter reincarnate. It was a basic machine design that had not been produced for some time, and one that entrepreneur Edward A. Gorney (remember him? He's the guy that made the UNIVERSAL GRIP as the Holy Engineering Company in Holly, Michigan, in 1939, ultimately moving to Detroit) saw having a rebirth. So Gorney took his earlier UNIVERSAL GRIP idea, stuck it in a much more modern cabinet, added lift and push-pull, and set up the Mercury Steel Corporation at 3830 Holbrook Avenue in Detroit, this time leaping into machine manufacturing on a large scale. Starting with his ATHLETIC SCALE (which soon become the STANDARD ATHLETIC SCALE model) in the spring of 1947, deliveries actually began in October. The DELUXE model was added by the end of the year. By spring 1948, Gorney had a line of 7 similar but different athletic test machines, had doubled his factory space, and was well on his way to becoming a dynamo in the business. After years of war, when no one could buy a new anything, Mercury Steel Corporation was offering a full line of new machines. The market soaked them up as fast as they came out, and Detroit was big in coin machines again.

The difference between the DELUXE and STANDARD models is that the former is a 13 play machine whereas the latter is a 15, with the DELUXE missing 2 play Indian wresting options. As it was, the DELUXE offered:

Lift Test

Play No. 1: Lift with right hand

Play No. 2: Lift with left hand

Play No. 3: Lift with both hands

Wrist test

Play No. 4: Twisting right hand to right

Play No. 5: Twisting right hand to left

Play No. 6: Twisting left hand to right

Play No. 7: Twisting left hand to left

Play No. 8: Twisting both hands to right

Play No. 9: Twisting both hands to left

Grip or knuckle test

Play No. 10: Grip with right hand vertically

Play No. 11: Grip with right hand horizontally

Play No. 12: Grip with left hand vertically

Play No. 13: Grip with left hand horizontally

At a penny a play, that was 13¢ if the players went the full cycle. But there was a built-in restraint on machine performance. While the base is solid aluminum, with kick plates, handles and trim chrome or polished aluminum, the working parts are pot metal and they break. Easily.

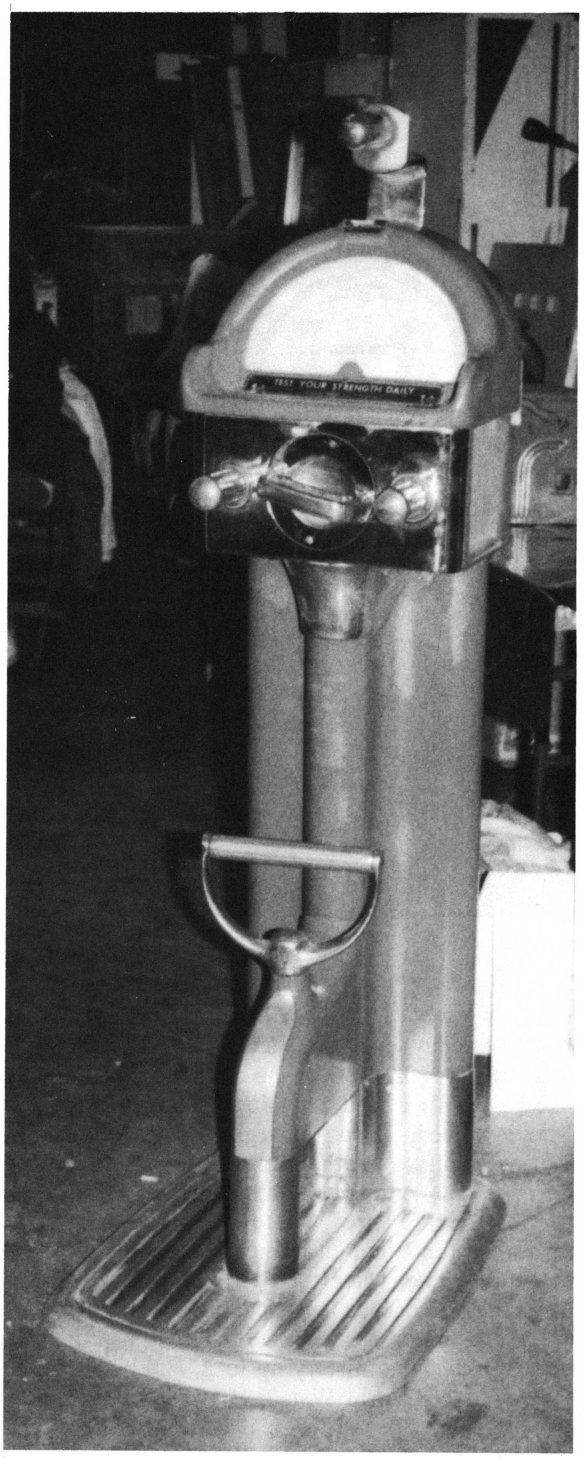
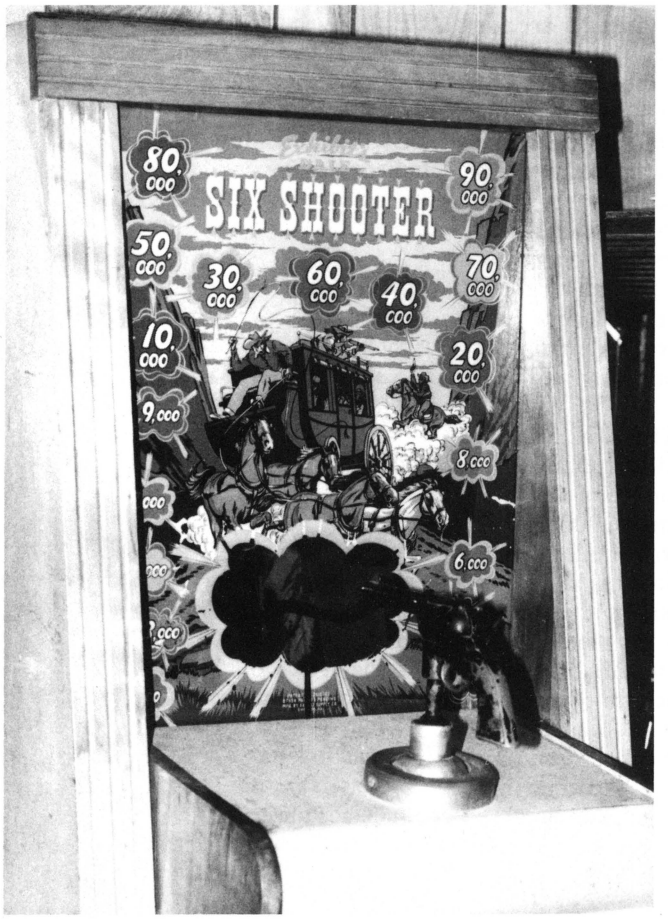


Photo by Dick Bueschel.

Exhibit Supply Company
SIX SHOOTER Floor Target Game
1950-1953





Mike Pinkosky Collection.

These days they're called the Fabulous Fifties, but at the time they weren't called anything. They were just lived! It was the beginning of the youth culture and the exploitation of the earth. While the warlike thirties and forties seemed to waste natural resources (and human beings!) at an unmatched rate, when the fifties came along that one decade used up more iron ore, petroleum and other raw materials than all of human history up to it, and that included World War 2. It was a consumer and technological bash at cheap prices, and mankind will pay the price of it forever.

Part and parcel of this usury against the earth was the fact more things were made by more companies than ever before, and a lot of it was useless. The things that were real and had a purpose stood out, and in time became fifties classics (which is what is mostly remembered today). One thing the fifties did was put Exhibit Supply in the gun game business. Without it, the firm probably would have gone out of business long before it did. It was the firm's Southern California connections that got the trend started. Inventor Eldon L. Dale of Long Beach created an electric shooting game that made it look like the target was 500 feet away, all compacted into a matter of inches. It was a sensation. So Exhibit Supply grabbed the rights and produced the "Dale Gun" which they called SHOOTING GALLERY, bringing it out in March 1950. But it had problems, not the least of which was a tendency to abrade a wire to the pistol which then rubbed against a mounting bolt to shock the bejeesus out of any player whenever they pulled the trigger. So Exhibit Supply redesigned the game, and in October came out with a whole line of classy gun games in similar cabinets but different graphics utilizing the same technique. They, too, were sensations, and gave the firm a new lease on life.

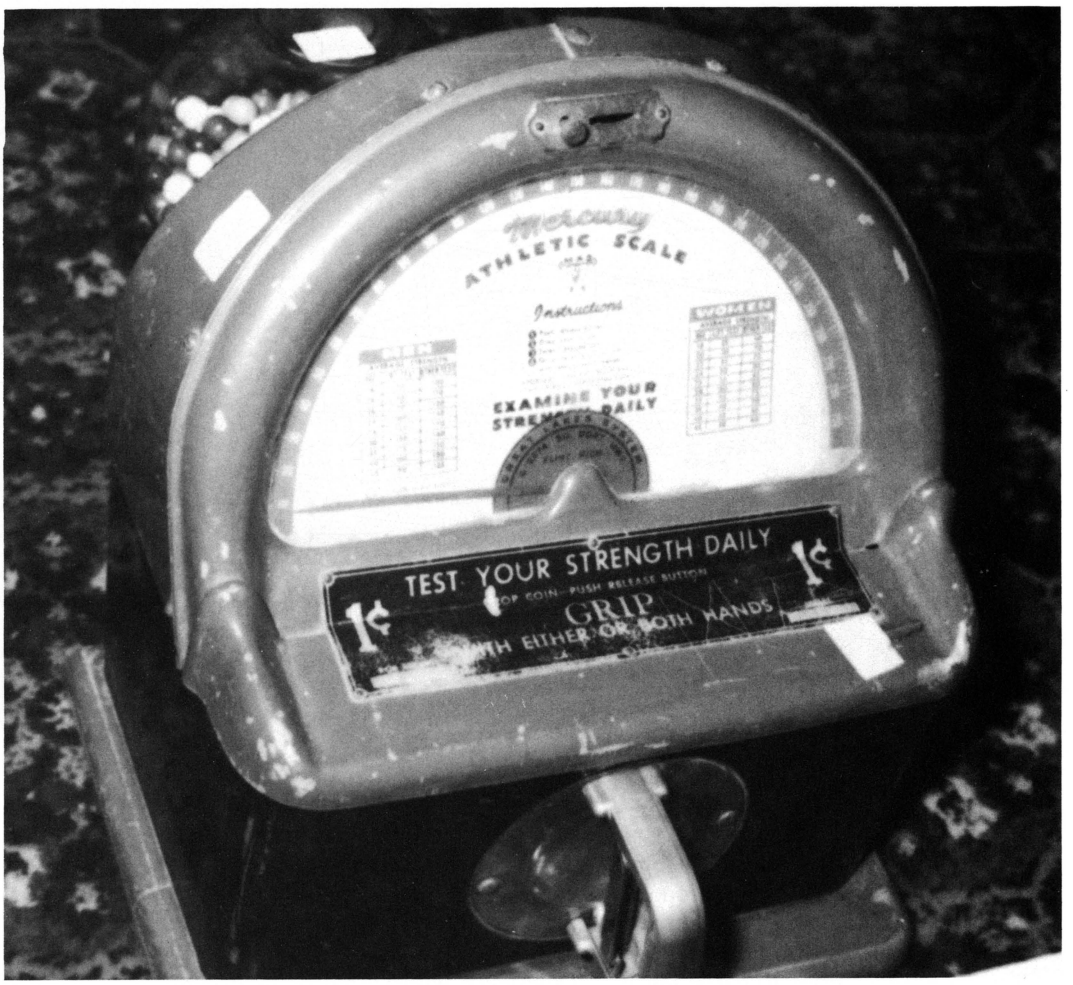
The new line had modernistic slant front cabinets (and looked a lot like the video games that would follow a quarter century later) with colorful backglass graphics surrounding the target area hole. Games were GUN PATROL, a battle scene with foxhole fighting, artillery and flashing bomb bursts; JET GUN using a bazooka-like gun against flying jet aircraft; and the tried and true Americana approach in this western version called SIX SHOOTER, in which a Colt .45 armed player is defending a stage coach, shooting bandits off of their galloping horses running in a circle. Realistically, when hits were made, that's what the bandits do. They fall off of their horses. Just like the "Dale Gun," more than the others, SIX SHOOTER was a hit game, and in later years has become a terrific collectors piece.

As a collectable piece, SIX SHOOTER has a lot going for it. For one thing, a manual is available and is traded and moved around on copy paper copies. For another, it's not that complicated. There are shot and hit step-up unit biscuits, a timer control unit, a hit bell, a motor and a bunch of coils, all workable. Later models have an added liberal relay. One interesting note. One restorer found the copy "Made in West Germany" inside the cabinet. That shows how international the fifties had become.

Great Lakes System
MERCURY ATHLETIC SCALE Counter Athletic Machine
1951-1957

That MERCURY ATHLETIC SCALE just won't go away. But, hello, it has a different name. Actually, it had quite a few. Going back 2 pages, you are to be reminded of the Mercury Steel Corporation of Detroit and their 7 models of grip and lift test machines. One of them was a countertop grip test. So much for that.

After some confusion over who made what, and what was a company called Mercury Steel doing in the coin machine business, the firm name was changed to the Mercury Athletic Scale Corporation in the summer of 1948. To make double sure that people knew what they were selling, the sales literature and advertising screamed "Look! Look! Look! From coast to coast operators are enjoying the Mercury Athletic Scales. They are bug proof and perform beautifully. Profits are beyond expectation. They all play it, young and old, men and women. Draws a crowd wherever they are. We practically let you make your own terms, pay as you earn –order a dozen or so."



Paul Olson Collection.

So people did, and didn't pay. What happened next is a little difficult to fathom because it doesn't seem to have shown up in the trade press. Did entrepreneur Ed Gorney sell out (or die)? Did the Mercury Athletic Scale Corporation of Detroit go into receivership? Did it flat go out of business and get bought out by someone else? Or what? Whatever the answer, by October 1951, a company called Great Lakes System located at 5274 S. Dort Highway in Flint, Michigan, was advertising and selling the machine. Actually, the whole line of machines, from the floor models to the countertops. And when they were delivered they carried a new nameplate on the glass, a decal that attributed the machine to the Flint, Michigan, address. The MERCURY ATHLETIC SCALE had moved upstate.

Great Lakes System didn't just take over on the machine(s). They made changes. The November 1951 ad copy says; "This sensational proved penny athletic scale has made a hit throughout the country. Our new model is completely redesigned and is now being offered at a new low price, finished in a variety of colors." What Great Lakes System did was strengthen some of those pot metal parts, and paint the machine in solid colors. Red, blue and black are known. Something else about it is nice, and that's the instructions. They don't go away or degrade because they're printed on the register dial and they're under glass. Charts are shown for the grip ratings of men and women indicating "Average Strength" by age. The pointer also stays where you moved it until the next coin goes in, so your buddy can see what he's up against if a competition is in the works.

In 1953, Great Lakes System made even more changes in the machine, making the dial dark and pointer white, plus cabinet changes. This is a wonderful machine to start an arcade collection. It's fun, it's cheap, it has a history, and it can't help but be a good investment.

Chicago Coin Machine Company

DERBY Floor Amusement Machine

1952-1953

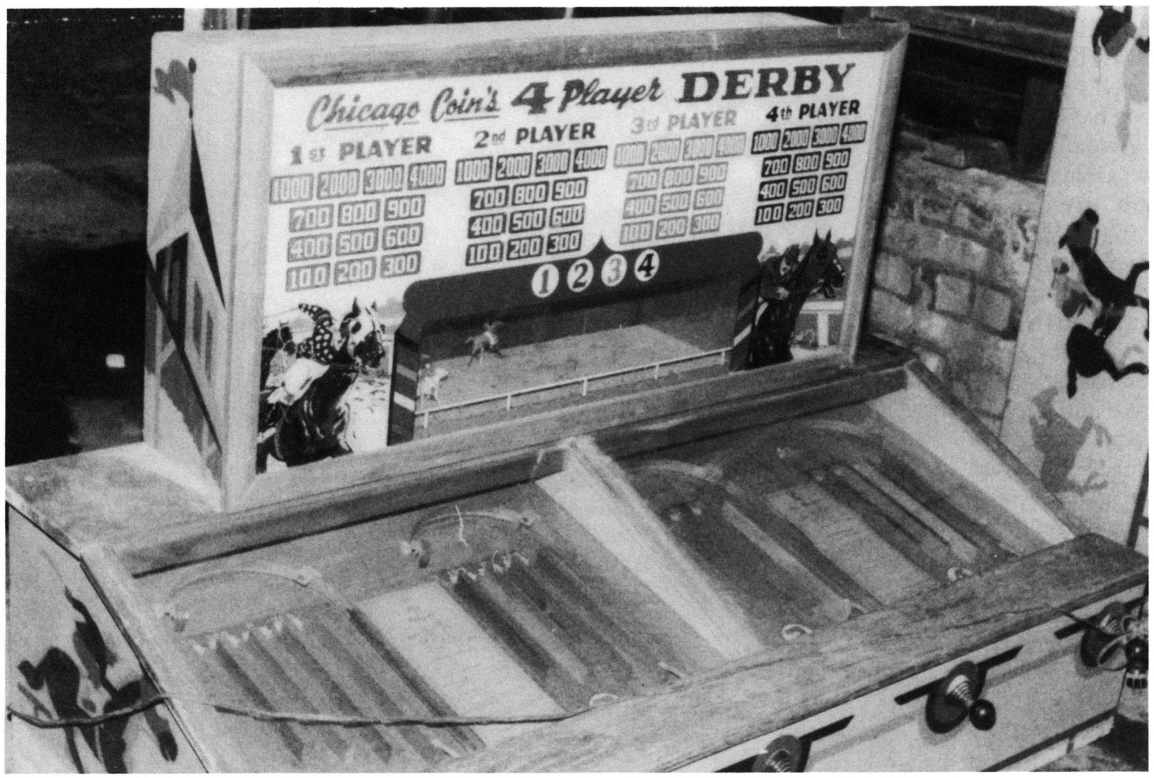


Photo by David L. Wright.

The Chicago Coin Machine Company was based on the proposition that a good machine made by someone else was worth copying and selling at a lower price to carve out a piece of market share without spending money on R & D and game development. It was such a good idea, Chicago Coin often found itself with good machines on it's hands, and lo and behold, even embarked on game development. Before long, they even got inventive and started making some machine ideas of their own that other makers copied until it all became too confusing and it got so that even those in the know soon didn't know who did what first. That may sound convoluted, but that's just about the way it happened. As a result, Chicago Coin wasn't a big name in the business, but once you got past the top 3 or 4 in any class of coin machine, Chicago Coin was there as the 4th or 5th producer. It happened in pinball, in fortune tellers, in bowlers and gun games; even — ever so briefly — in juke boxes and vending, and in amusement machines.

It was in the latter that Chicago Coin seemed to have an inner sense. More often than not, the copycat producer, at times the Chicago Coin version, was the preferred model. Like the experience with DERBY, for instance. This is no small game or toy. It looked a lot like a carnival game that you might find at a sideshow tent all its own. It is BIG! 66" wide — that's over 6 feet — and 32" deep — that's almost 3 feet — DERBY was more than a coin operated piece of furniture. It was a store unto itself. And the reason it looks so much like a carnival attraction is that it was based on a carny game, the hand controlled horse race, in which you punched a ball repeatedly into a small bagatelle game with a driver with the resulting scores jolting your horse down the track.

The face of the machine has room for 4 standing players (it was sometimes called the "4 Player DERBY," the copy on its nameplate backglass) who raced each other for score, each putting in a nickel. Or a single player could race against the other 3 horses, with a built-in mechanism moving the unmotivated nags along in a close heat race. It is grand excitement with the operators cashing in, for a race lasts an average of 1.1 minutes. So running 10 or 12 an hour was no big deal.

Part of the enjoyment is the fact that the horses run across the front of the machine, not front to back. A separate stage for the 4 tracked horses running from left to right let everyone see how they were doing, or showed the single players what they were up against. As you watched, the horses jumping and jerking their way down the track, changing positions as the scoring notches upward, the excitement built up. And there was no stopping until the first horse crossed the finish line and the game automatically shut down.

This thing is exciting. Chicago Coin called it, "Four games in one...by far the most competitive game ever made." Play it once and you'll believe that, for sure. It's at its best when there really are four players. When there are, it's a screamer. If it's that exciting, imagine what an audience a payout model might have. Well, Chicago, Coin imagined that, too. They made one.

Mike Munves Corporation
GRANDMA Floor Fortune Teller
1953-1960

Back in the late twenties and early thirties, when the International Mutoscope Reel Company Inc. was swinging high and making the products that made it one of the two top leaders in arcade machines, they had a part time sales manager who had his own business on the side called The Penny Arcade Headquarters. His name was Mike Munves, and he had probably forgotten more about the arcade business than anyone else ever knew. In 1912, when he was only 20, he set himself up as an arcade machine distributor and for the next 58 years, until he retired in 1970, that's what he did, not counting his stint at Mutoscope to get them straightened out and running good. Along the way, he also refurbished, revamped, rebuilt, repped and built arcade machines, forming his Mike Munves Corporation in the thirties to do any and all of these things. He always carried the tag lines "We carry the largest selection of amusement machines in the world, Send for our new catalog today," in his advertising and literature. In the thirties, forties, fifties and sixties, if the subject was arcades or their machines, Mike Munves had a hand in it somewhere along the line.

It was during the WW2 years, and a decade or so afterward, that the Munves name began to appear on new (or if not new, renewed) machines for the arcade market, an activity promoted by brother Joe. Starting with rebuilts of the Chester-Pollard games to modernize them for forties play, Joe Munves reached for their most successful namesake machine. Guess who? GRANDMA! As a lady who had been sitting in cabinets since the twenties, GRANDMA was hardly a new idea. But she didn't have to be. The same friendliness and feigned concern that the aged lady showed for followers for decades was still there, only her face was dirty, her shawl and shoulder sash were frayed or even moth–eaten, and her cabinet was bashed, old and outdated. The old broad had grown even older before everybody's eyes.

So Munves spruced her up, and he did it on a production line basis. New heads, new clothes, new mechanical parts, and finally a completely new fifties-appearing cabinet that looked like



Photo by Dick Bueschel.

something left over from the International Mutoscope digger days. Before long, the Munves GRANDMA was all brand new, with a lightbox header that said "Your Future," with "Grandma's Predictions" carved into the wood. So once again, after years of neglect GRANDMA tilted her head, lit up her eyes, heaved her bosom, moved her arm and tossed you a printed fortune card, this time for a dime.

The evolution from the fixup to the makeup happened so smoothly you almost didn't know what transpired. In its final 1953 Munves original form, the GRANDMA was distinctive. When first cataloged, the Mike Munves Corporation called the machine the MODERN GRANDMOTHER, later the "Deco Grandmother," showing it in a streamlined and carved modern wooden cabinet that depicted a steaming teacup on the front. Selling copy called it "GRANDMA. A Munves creation. Now modern and up-to-date to fill a long felt need for the arcade." Except! Traditional arcade owners didn't like the new cabinet. Some (and later collectors) put them into older looking cabinets.

Bally
ABC BOWLER Table Bowling Game
1955-1956



Photo by David L. Wright.

Not very often does a new game idea come along and sweep away the coin machine industry. But it happens. Usually it's an old game in a new guise, such as the shuffles and bowlers. Both had been around since the 1890s and had continual followings since. But it was the advent of backglass graphics and pinball scoring that suddenly made them so attractive. It was because of this electro-mechanical background, and the established players in the pinball field, that new names crept into the arcade machine inventory. Pinball makers Gottlieb and Williams somehow avoided the rush to table games. But not so for Genco, Chicago Coin, United and Bally. It was their ball game, and they went for it.

It was multi-game maker Bally that leaped full tilt into the shuffle bowler business in the early fifties, belting out a new game almost every other month by the middle of the decade. But what about market saturation, and where were all these things going? The location was relatively new, and the high water mark seemed endless. It was taverns and local bars, and with ten of thousands of them across the country — some few already had coin machines, maybe a pinball or two, while most didn't — it seemed as if it would take a mighty long time to fill their floors. Actually, it didn't, and they were filled by the sixties. But on the way to that nickel nirvana, the business was wide open. The question, therefore, became one of size and content. Small bars needed small games. Big bars with a lot of traffic needed multi-player big games. Then there were all the other size shops in the middle that needed all sorts of other up-and down-sized games. It was a market director's dream, the customer base that needed any and everything and wouldn't fill up. It was into this maw of acceptance that Bally introduced its big shuffle bowlers, and they ran away with the business. And the king of the big shuffle bowler line was Bally's ABC BOWLER, Bally's game No. 569, available as Model A-110 in 10¢ play and A-325 in 25¢ play. It's issue date was June 14, 1955.

Shuffle bowling, also called puck bowling, didn't use a conventional ball, so there was nothing to bounce all over the bar. The puck slides across the wooden or composite alley, making contact connections in the case of the ABC BOWLER that flips up simulated bowling pins so it's just like bowling. Bally's ABC BOWLER upped the ante of simulation by using king-size foot high pins (most puck bowlers had much smaller pins) and a large puck, giving a greater "feel" to the game. Scoring is the same as full-size bowling, 10 frames per game. What Bally's ABC BOWLER added was 6-player scoring on an enormous backglass that could be seen anywhere in a bar. The game specs describe a bowler "...8-1/2 ft. long, 25 in. wide. Light-up scores with speedy totalizing. Genuine Formica playfield. Hinged pin-hood, doors and playfield with easy-up elevator on playfield. Speedy pin re-set. Quiet operation. Fun for one player ...more fun for competitive teams of 2 to 6 players." The DELUXE ABC BOWLER has an enhanced backglass. CONGRESS BOWLER and DELUXE CONGRESS BOWLER are the same game, only they add a match-score feature to the scoring. These games are a lot of fun to collect and play. They have only one real problem. They're big.

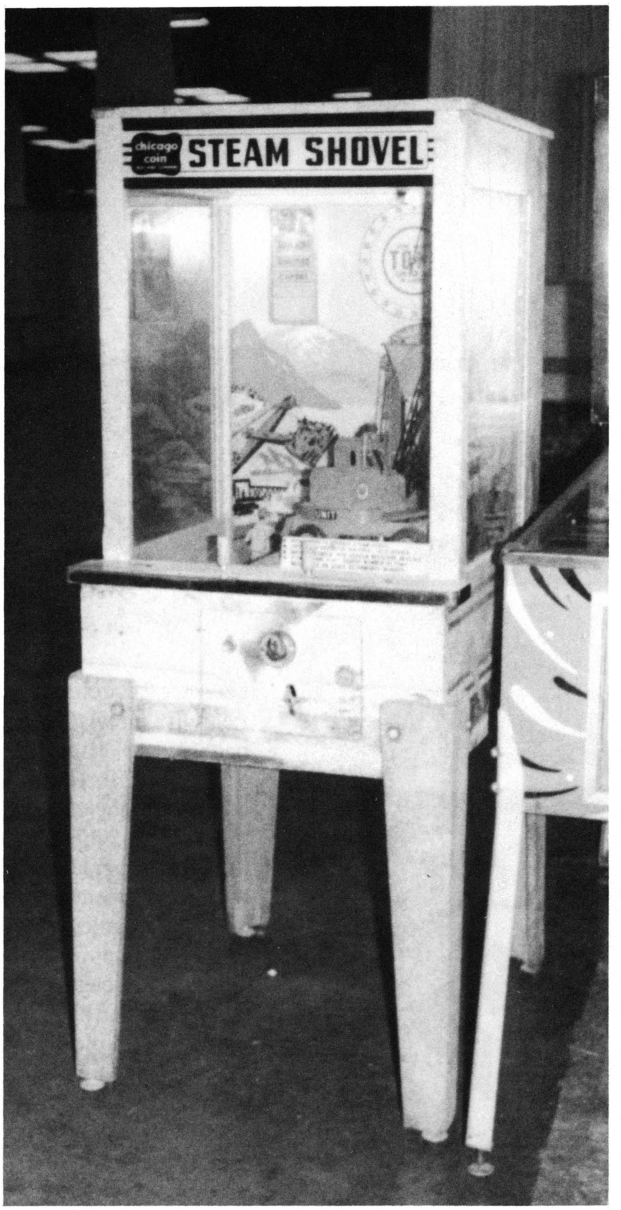
Chicago Coin Machine Company

STEAM SHOVEL Floor Amusement Machine

1956-1957

Which one came first? The Chicago Coin STEAM SHOVEL or the Williams CRANE? This time around it looks like the kudos go to Chicago Coin for a clever and exciting idea, followed by Williams. The STEAM SHOVEL made its grand entrance in May 1956, followed by the CRANE in October. And that was it for these fun machines, none before and none since. And that's a rarity in arcade.

The Chicago Coin STEAM SHOVEL may look like a digger, but it isn't. The object of the game isn't to grab a valuable prize and dump it in the return hopper. It is, of all things, to pile up score. What you're trying to do is pile up a load of beams to weigh in within a time limit to see "How many tons you can load" while the clock ticks. The moment you push in the coin, the clock starts ticking. The press release that came out when the game did explains it to the uninformed. "STEAM SHOVEL, the kiddie construction game, features lever-operation of a miniature steam shovel enclosed in a glass cabinet. Players get scores for lifting simulated gravel into a hopper via the steam shovel, and a clock sets a time limit on the operation." There was enough of an element of chance to this, or the requirement of an enormous amount of skill, to warrant making the game in both regular and replay models, with the location paying off the free games in coin, kiddie game, indeed! Chicago Coin called it "...a natural attraction for thousands of new locations like retail stores, terminals, arcades, dime stores, etc.," with "...two lever controls for simple operation."



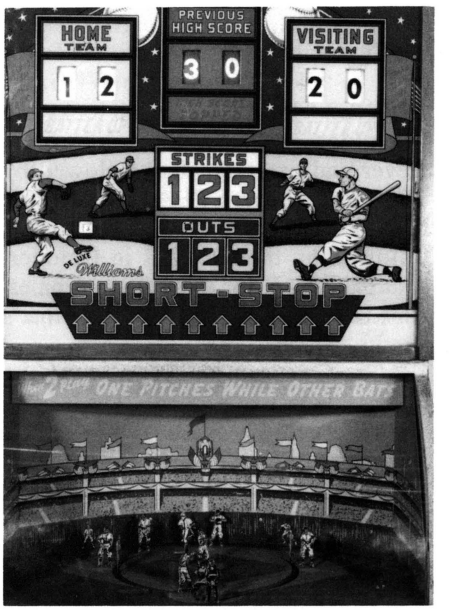
Russ Newman Collection.

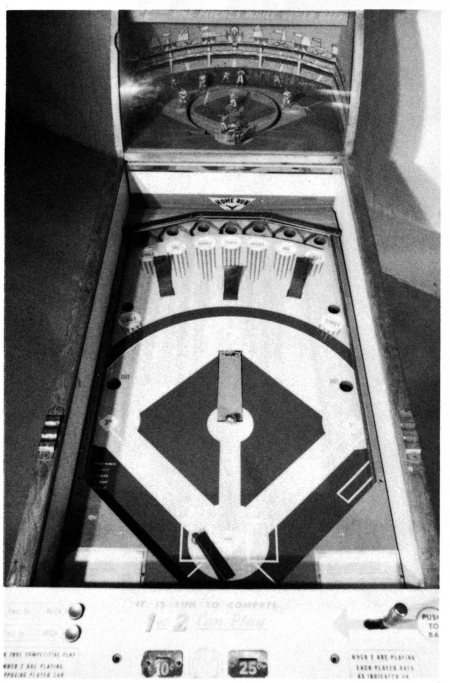
And what could all that operation lead to? Well, we know about the free games on the Free Play model. But even the Regular Model had its rewards. The spec sheet explains that one. "Special rating panel ranks player either as Beginner, Advance, Qualified (or) Expert!" This thing is beginning to sound less kiddie and more biggie all the time, as well as a challenge and a lot of fun.

All of these confusing signals are very indicative of the arcade machines of the period, for everything seemed very ambivalent. The whole business was in flux. Would arcades grow, or die? Or would they even be around in the next year or so? President Eisenhower had indeed pulled the country our of the War in Korea, but then it seemed nothing else happened for years. Oh yeah, the U-2 spy plane was shot down over Russia (and it was years before the world learned a Soviet fighter was shot out of the sky at the same time to get it) and the French got kicked out of Viet Nam, so we started to trickle people in there to save the situation (leading to the nation's longest and most disastrous war!). But other than the fears of the Cold War, the world seemed set in its ways with little change in the offing. The fabulous fifties lifted acquiescence to the level of an art, a feeling that the sixties would shake to its roots. STEAM SHOVEL is a typical machine of the period, a short lived game that seemingly went nowhere. If you want to see one, and play it, there's one display at the Bellin's Antique Car and Music Museum in Sarasota, Florida.

Williams Manufacturing Company
DELUXE SHORT STOP
1958-1960







Steven B. Penn Collection.

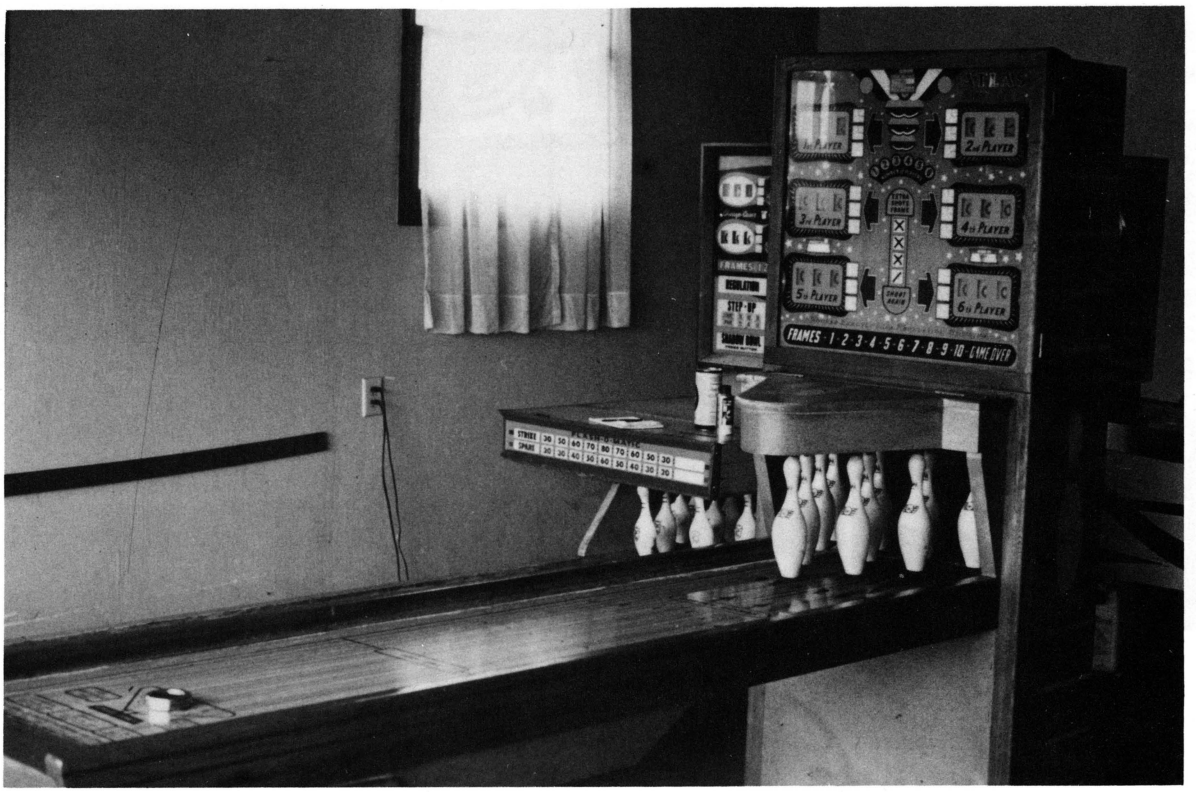
Harry E. Williams gained his initial fame as a pinball designer in the early 1930s. Then he became a contract game designer, and finally landed at Exhibit Supply just before the WW2 years, working with electrical engineer Lyndon A. Durant to create the outstanding Exhibit Supply line of pinball games. Then, when the war years wouldn't allow game production, Harry and Lyn left Exhibit Supply and formed their own company to revamp the Exhibit Supply games they had created, returning them to the market with new names, playfields, and backglasses. Because the two of them had joined forces to create their new company, they called it the United Manufacturing Company and set up shop on the far north side of Chicago. Then they had a disagreement that cut to the bone and Harry pulled out, selling his half to Lyn, and opening his own shop in the center of Chicago. The year was 1944.

With both going their separate ways, their line of development soon evolved into unique directions, reflecting the personalities of the two men. Durant was an electrical genius and a promoter, so the line took chances with off-the-wall ideas that as often as not caught on and became standards. Williams was a cerebral designer of playfields and involved ball movement who presented the market with games that either had players gasping over the cleverness of the presentation or were left cold by what appeared to be a dead idea. Both men had their duds and hits, with both achieving these results from different directions.

One of the perennial Williams hits was the annual baseball game. Even before pinball, Williams had gotten into the coin machine business via an early thirties baseball game, and he never forgot it. So once he had his own company up and running smoothly by the fifties, and firmly believing in keeping a game idea fresh by new innovations, Harry Williams brought out a ball game every year. His cerebral approach was soon evident. By the middle fifties, his baseball games had animated figures that ran the bases, free hitting balls that appeared to fly over the fence (a simulated illusion achieved with a panel of plexiglass) for a home run, wildly lighted playfields and backglasses, and a special feature for each game.

The heart of the Williams Manufacturing Company baseball games was a pitching unit created by staff game designer Gordon T. Horlick of Chicago in 1954, and used in one form or another for another 20 years (Patent No. 2,726,649, "Ball Pitching Device, " Patentee Gordon T. Horlick, Chicago, Ill., assignor to Harry Williams Manufacturing Company, Chicago, Ill., a corporation of Illinois, application filed in March 16, 1954, patent issued December 13, 1955). The 1958 game, called SHORT STOP, modified the pitching unit to change the speed and position of the pitched balls to keep players on their toes. A 2-player, when there were two players one pitched while the other batted. The DELUXE SHORT STOP added lighting and offered free games for lighting the "T" letters in the SHORT STOP name, or beating the previous high score.

United Manufacturing Company
ATLAS SHUFFLE ALLEY Table Shuffle Game
1958



Ted Heushberger Collection.

United made baseball games, too, mostly to compete against Williams. But if United had a special area of expertise, it was in electrical scoring shuffle games. They made the genre their own. They may seem all but passe today, but it is impossible to underrate the significance of the shuffle games in the 1950s. They were everywhere and, as big as they were, they commanded a lot of space, time and attention in a bar. Then there was that special area of games that was practically owned by United, and that was ball bowlers. Very close in appearance to the shuffle bowlers,the ball games free rolled an actual hard rubber ball that physically hit the pins to flip them out of the way for score. It United had any competition here it was only Bally. Between the shuffles and ball bowlers, United had a fantastic business. Where Williams turned out a baseball game a year, United had a new shuffle or bowler or both every other month, and sometimes every month. Where did they all go? There was plenty of room, for it took a decade to fill the need. Only the dart games of the eighties can be compared to the shuffles of the fifties, except the table games were even more popular. No bar was complete without one. Or two.

The United shuffles developed rapidly, with new features piling into the marketplace almost as fast as someone thought them up. The regular games had a wide variety of scoring plans, with the DELUXE versions of the same games adding number and symbol match features for replays and free games.

The basic 1958 model was the EAGLE SHUFFLE ALLEY, a 6-player with a tall backglass that came out in May 1958. In addition to it's big size pins, National coin register, burglar proof cashbox, and self-contained back box mechanism, the EAGLE SHUFFLE ALLEY added an extra shots feature in the 5th frame where the player got 2 for a strike and 1 for a spare. It was broadcast in the central graphics of the backglass in a tall 4-box column titled "Extra Shots Frame," with the instructions "Shoot Again" at the bottom. The feature was an optional one, but most games seemed to have it.

Then, in September, the EAGLE SHUFFLE ALLEY was enlarged to make it a bigger and longer game. But about all that changed in the play and backglass was the game name: ATLAS SHUFFLE ALLEY. Unless you know from the start they are different games, or read the names, you can't tell these things apart. Oh, the cabinet graphics are a little bit different, with a big bowling pin picture on the side of the ATLAS SHUFFLE ALLEY whereas the EAGLE SHUFFLE ALLEY is plain. But other than that, it's a wash. It's also an I.D. problem. So many of these similar games with different names were made in the fifties, one wonders if they'll ever all be identified or if surviving examples will be retained. The games are fun, but who's got the room?

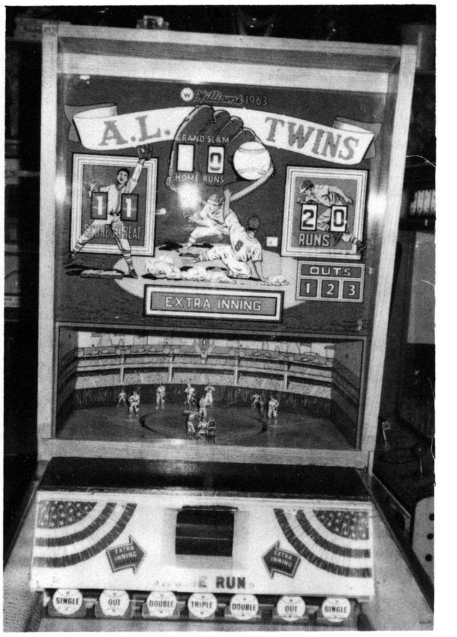
Williams Electronic Manufacturing Corporation

A. L. TWINS Table Amusement Machine

1963







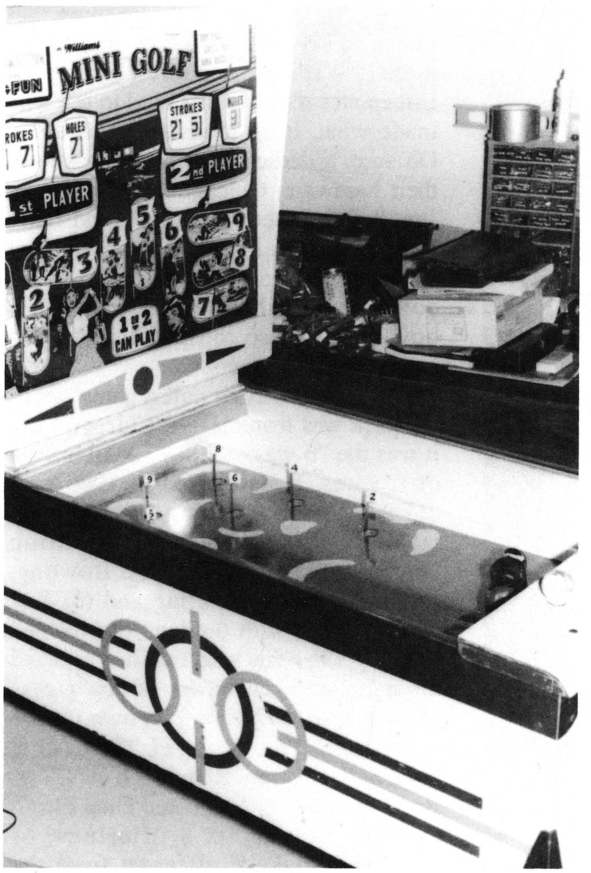
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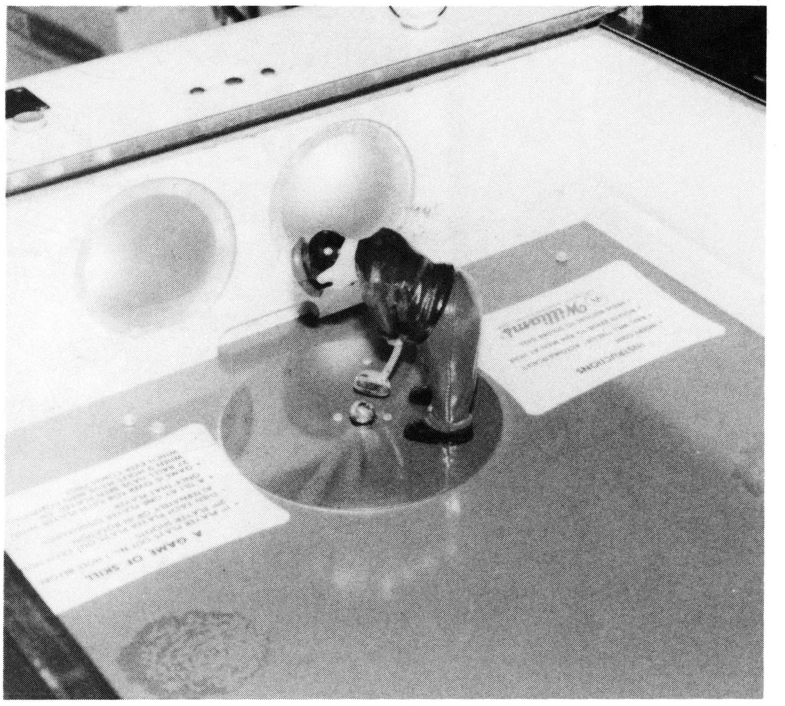
Williams baseball is back. And so is Williams with a new company name. After years of almost just scraping by, the Williams firm was beginning to position itself for the industry dominance it would reach for in another quarter century. Much would change, and that included the annual issuance of a baseball game. But not just yet. In the sixties, it remained an important event.

Until the arrival of the Williams A. L. TWINS (the backglass actually dated the game, saying "Williams 1963 A. L. Twins") the game names were very generic: KING OF SWAT, SHORT STOP, BATTING CHAMP and the like. But A. L. TWINS named a team, the Minnesota American League Twins. With that, all the famous Williams 3-dimensional features are there: the little figures, the base runners, the pop pitching, the manual bat, everything that made the Williams ball games so great. Push in the dime for a game, or a quarter for 3, a "score to Beat" pops up in the left window, anywhere from 11 to 19. The far wall baseball-shaped targets of single-out/double-out/triple-out/single are also set up to be hit by a free flying ball once it has been batted. A solid center line hit sends the ball into the Home Run hole, the lights go on and the players run bases. Or you inch along by hitting those drop targets. Set things up and hit a "Grand Slam" and you'll see lights and hear bells and buzzers you never knew were in the game. If the "Extra Inning When Lit" light is on when you pop a home run, you pick up three more outs to play and pull out the game. And, as an extra award, up to a pre-set limit of free plays can be earned by the number of runs above the "Score To Beat," with the runs and free game potentials set by the operator.

The Williams MAJOR LEAGUE is the same game with both replay and over-the-fence home runs included in addition to the extra inning feature. Everything looks the same except the backglass, and even there the only change is the game name, with even the "1963" retained. The standard Williams patented base running unit and the modulated pitch mechanism are what make the game as it did for so many machines before it and afterward. The pitch mechanism was called the "Mystery Pitcher" because the ball could be tossed at you fast, slow inside, or slow outside. You just never knew. All you could control was the pitch timing, but not the type of pitch. Press the button at the left to pitch, the ball comes your way, then push the lever to bat. Swing! Miss and you get another chance. Connect and hope for the best, because it is just as easy to hit an "out" target as it is to knock over a single or a double, with the triple tougher. In fact, the swatting and swinging that goes on wears these games out and even breaks their glass. Now that's a hit and a half!

Williams Electronic Manufacturing Company
MINI GOLF Table Amusement Machine
1964-1965





Photos by David L. Wright.

Later Williams pinball fans are amazed at the many arcade type machines issued by this manufacturer in the sixties. Somehow Williams is supposed to be a single subject producer, with pinball that subject. But that was never the case. Even in the videogame period to come, Williams played both sides of the fence, with arcade games interspersed among the pins.

The Williams MINI GOLF issued in October, 1964 is a classic example of the product mix. Entirely different than anything that had gone before it, MINI GOLF swatted a golf ball into a 9 hole 3-dimensional golf course. In fact, a little man swinging a golf club did the swatting. In effect it was a modified baseball game in which the steel ball was set up for the tee shot, with the shooter able to rotate the direction of the play by means of a golf ball knob on the cabinet. You put in a coin and the ball automatically tees up. Then you start working that knob to aim the man at the hole you want to make, then press the button to putt the ball. And off it goes, heading past the sand traps and the flags to sink into the next hole in sequence as the game is played.

And that's the key to MINI GOLF. You're not going for home run hits, but rather a planned and sequenced game along the lines of real golf. And you have a limited number of strokes to pull it off. The game details in its spec sheet explain the action: "A real test of putting skill. Player turns mini-golfer toward (the next) lighted hole. Player can control mini-golfer's stroke with 'hard stroke' or 'easy stroke' button."

MINI GOLF is a 2-player game; "Each player putts alternately, hole by hole, until all 9 holes are made or 27 strokes used." Both 1st Player and 2nd Player scoring drums are used to indicate the number of strokes used and holes made, with each hole lighted on the backglass as made. And that's where the similarities to Williams pinball can be seen, with "Formica playfield and front molding, Stainless Steel trim cabinet (and) single or twin chutes (and) slug rejectors."

Just as the baseball games were made, or even the firm's pinballs for that matter, the Williams MINI GOLF could be had in both replay and straight novelty play models, the latter just the game for the game's sake. It's the 3-dimensional aspect that makes the Williams MINI GOLF so charming, with that small hunched over golfer the character that makes the game much more than an aim-and-hit machine. The backglass promises "fun" and "skill for fun and recreation," and delivers on all counts. What a marvelous collectible toy this would be for a golfer, or what a moneymaker in a pro shop. Williams said it was "Location tested...all the thrills of real golf!" Except maybe bingo-bango-bongo per hole for a dime or a dollar.

Chicago Dynamic Industries, Inc.
TRIUMPH Table Shuffle Game
1964-1965



Photo by David L. Wright.

Bally had its bowler and puck bowling competition in United and Chicago Coin, and not one of the trio ever let up. As fast as each one brought out a new alley game the other two were back with direct competition. Yet each had their distinctive characteristics, based on the existing tooling and patent positions of all three firms. They were all the same, only different.

The Chicago Coin Machine Division of Chicago Dynamic Industries, Inc., located in a low flat brick building at 1725 W. Diversey Boulevard, on a busy industrial row along Diversey close to the scruffy Chicago River, accepted a somewhat modern stance. But so did Bally and United. All 3 were relative newcomers to the industry, getting their birth out of the game of pinball; Bally and Chicago Coin in 1931 and United a dozen years later as a WW2 pinball revamper. So they were avid backglass and electrical scoring companies that like to add color and flash to their equipment. With their names hidden or nameplates removed it's hard to tell who made what, it all looks so much alike. Oh sure, a dedicated United fan knows their hardware, Chicago Coin buffs can spot their cabinetry in a flash, and Bally graphics have a look all their own. But to the general public and broad-based collector the shuffle alleys and ball bowlers of these top producers are a confusion of products.

The only way to pull a game out of the pack was features. At Chicago Coin it was the "6 ways to play" combination of features. It started out in 1960 with (1) All Strike Bowling, (2) Regular Handicap Bowling, (3) Regulation Bowling, (4) Flash-O-Matic Bowling, (5) Lite-O-Matic Bowling and (6) Red Pin Bowling, with the lead pin painted red. By 1964 this selection had evolved through 2 or 3 generations of new games with each game offering its own unique selection. The 6-player TRIUMPH puck bowler offers Regulation Bowling, Red Pin, Flash-O-Matic and Dual Flash-O-Matic among its 6 offerings, or enough to make it different from the other Chicago Coin games of the period. You put in your money, light up the game you want to play in the backglass with a button, and then try and convince 5 other people in the bar to go along to set up a competition.

And you got a lot of entertainment for the money, and still can. One of these 6-player games at a house party can make the evening memorable. When you've got 6 involved at a minute or two per shot a game like this can last a long time. The way it played at the time was a dime a game, 3 for a quarter, 6 or 7 (note that it cleverly covered the 6-player need with a single coin) for a half dollar, a coin still in general circulation at the time. Or two quarters would pay for the 6, either way. And that's why the half dollar was sometimes set at 7, to keep providing discounts the higher the coin denomination. The plastic score drums on the TRIUMPH are the newer, larger size introduced a year or so earlier, and the pins are the fast flip-ups developed by Chicago Coin game designer Werner W. Stunkel in 1959.

Chicago Dynamic Industries, Inc.

SUPER PAR GOLF Table Amusement Machine

1965-1966

When it came to novelty games and baseballs, Chicago Coin was squared off against Williams Electronics and Bally, and some of the newcomers entering the business, such a Midway. But it was the Williams competition that was the most intense. So when Williams brought out MINI GOLF in 1964, Chicago Coin followed the next year with PAR GOLF, a 10¢ game and a 3-plays-for-25¢ version called SUPER PAR GOLF. The happy fact is that the Chicago Coin game plays entirely differently than the Williams machine. In fact, PAR GOLF is more like a pitched ball baseball game whereas MINI GOLF was an adaptation of a set-up, aim and bat game. Both are fun, and unique.

In Chicago Coin's PAR GOLF and SUPER PAR GOLF the lighted holes of the Williams game are replaced by drop targets, with a full 9-hole course circumnavigated by up to 35 allowed strokes constituting the game. That led to some interesting play possibilities. Chicago Coin said that "For the 1st time..." it was "...Something Different. Chicago Coin's PAR GOLF provides exciting, challenging action on a 9-hole, par 35 actual 'course.' Drive and Putt. Player drives as many times as needed — 100 to 250 yards — to get on green. Hooks! Slices! Perfect Drives! When on green, player putts to hole out. Score rack lights up number of hole, yardage and par in sequence, 1 to 9...registers running total of strokes played. Hole-In-One on 250-yard 5th hole, when player's first drive makes lighted 250 yards green. Beautiful 3-Dimensional animated back rack. Realistic, colorful play field with 'Permatized' finish that resists wear and scratches. Golf ball 'Tee-Up' and 'Swing' buttons on Formica panel. Cheat-proof reinforced front door. Fits every location. Colorful rugged cabinet 57" long, 24" wide, 72" high with metal molding and legs. Location tested." It was all there, all of the advanced features of modern pinball, including steel side rails, a Formica shooters platform, the generic metal legs of the 1960s pinball game and the advancing scoring.

What sets the game apart is its animation. While most of the backglass is screen printing in color on glass like a self respecting pinball game, there are two windows that show "Drive" on the left, "Putt" on the right. And these were an entertainment onto themselves. The "Drive" caption copy on the backglass says: "For longest yardage to reach green." And inside, backlighted, is an animated guy that takes a swing at the ball when you push the right button. The same holds true for "Putt," which says: "For lowest strokes." Push the button, the animated man makes a putting arc swing, and balls move, hole by hole. That tally is kept in the vertical center panel, while strokes and yards are marked off by lighting across the bottom. It's a grand game, with its spec sheet claiming you can achieve eagles, birdies, pars and bogeys. But the biggest claim is one for profit, based on, as the sheet says, "Fast Play. Averages well under 2 minutes per 9-hole game." As a single player that's not half bad.



Patrick Hamelet Collection.

Midway Manufacturing Company
MONSTER GUN Floor Target Game
1965-1966



Paul Olson Collection.

New names. New Games. In the sixties things were changing. Electronics were sweeping into the industry and while the builders in situ were scrambling to keep up with the racing technologies new machine makers popped up with this rarified knowledge in their kit bags. The older order was being threatened. It was survival time.

The game makers may have changed a great deal, but public taste didn't. Ever since Exhibit Supply brought the shooters back with the "Dale Gun" in 1950 gun popularity never waned. The targets varied a lot and there weren't so many warlike games shooting down helicopters or blowing up trains and hospitals in the sixties, or even elephant or tiger hunts for that matter. A growing sense of individual responsibility was gripping the earth, and peace movements began to get more press than warlike postures. It got so the most creative part of a gun game was its theme, and who you were hitting. That meant that the graphics, long restricted to the scoring backglass and inside targets only on traditional guns, would break the bounds of convention and start to spread all over the machine cabinets. It was a whole new look for the genre, with a whole new maker leading the pack.

The Midway Manufacturing Company was located in Franklin Park, Illinois, a far western suburb of Chicago and a railroad commuter town. It wasn't the first coin machine maker located in town. When the Johnson Act of 1951 outlawed slot machines, the Ace Manufacturing Company set up in town to manufacture "Hightop" slots, lasting until the late fifties. When Ace went down, Midway came up. There was no connection, but there was experienced labor. Midway started with roll-ball arcade type games in 1959, and made their first target game in 1960. Gun games became a Midway hallmark, coming out in rapid succession in the early sixties.

Midway's MONSTER GUN was the Fall 1965 entry. Midway said; "It Shrieks with Money-Making Power," and it sure did. Look down that barrel into the inside target area and you're facing spooks and goblins, revolving discs and stationary targets. It is an electromechanical gun fight with a difference in that the spooks are spooky. For your dime you get 3 timed target sets of devil birds, horror faces and ghosts. Two of the sets are in plain light, and the third is in black light with everything floating in space. Midway said the MONSTER GUN had "...20 scary moving targets, plus moving light targets (while) black light glowing targets give tantalizing action." In the first set stationary targets give 2 points and moving targets 3. The next 2 sets give 2 for stationary, 3 for the inside moving targets and 5 for the outside. A drum scoring unit on the upper right front thumps up the total as you shoot. There were both Regular and Shoot Again models, the latter offering free games if you beat the digital score shown on the inside glass, which changes each game. These games are highly undervalued and are worth having for the sheer fun of their spooky sport.

Williams Electronics, Inc.
SNIPER Floor Target Game
1970-1971



Patrick Hamelet Collection.

Here it is 5 years later with another gun, and it doesn't look that much different than the previous machine. Except this one is by Williams. It just goes to show the design stagnation that had gripped the arcade machine makers in the sixties. In terms of advancement not much happened. Williams continued to make its pins, baseball games and guns. But so did Midway, Gottlieb, Chicago Coin, Genco, United, Bally and others. There just wasn't much in the way of new game development. As a result everything by everybody began to look alike.

What makes the Williams SNIPER stand out from the pack? Not much! Manufacturer's nameplates could have been switched from one machine to another and few people would have been the wiser. Except for one thing. The sound. SNIPER has a tone to it that sends chills to your bones. It all started with a Williams gun game called BONANZA in the summer of 1970, a couple of years after the Williams name had changed once again. BONANZA offered the "Realistic reverberating sound" of an "...exciting mine explosion, pounding hoofs, gun shots," in an "...easy to service sound system, front and rear access panels." And here you thought a gun shot was something. The reality was you thought you heard a gun shoot something, whereas a big part of the simulation was what you received through your ears rather than your eyes. As a result BONANZA was a terrific hit and set the pattern for a whole raft of Williams gun games to follow.

Where BONANZA had a western theme, SNIPER picked up on the realities of a new age and offered up an enemy soldier, and a generic one at that. The bad guy at the barrel end of the gun has no identifiable race or creed. He's just the enemy. The battle scene is something out of the Korean War, or perhaps WW2, but nothing like the agony of Viet Nam that the nation was facing at the time. It's almost as if the real war that was chewing up the young men of America was too painful to face, so in our games we faced something else. Ourselves, perhaps. Painful as it was, there were no Russians out there anywhere in the world that were bombing civilians or shooting people in the streets. Their day would come in Afghanistan, and that was only a few more years away. They would learn what America learned (as the British did a generation before us), that being cop to the world is costly and often leaves you friendless. And in debt.

Meanwhile, that policeman's job required more and more fodder for Asian guns, and American kids played war. SNIPER offered a "...variety of war game targets in depth. Three traveling targets, one turn-around target, shadow box targets, including half-track, tank, sentry, ammo boxes, oil drums and ammunition dump. 25 shots per game. extended play, 10 extra shots for skill score. SNIPER rifle game, novelty or extended play model. 2/25¢ play recommended for top earnings." So bring one home and teach the kiddies to kill, kill, kill!

Midway Manufacturing Company
S.A.M.I. Floor Target Game
1970-1971



George McLain Collection.

So, if target rifles could knock off an enemy soldier or two, just think what a rocket-powered missile intercepter could do to an intercontinental nuclear tipped missile heading your way? And for 2-bits you could find out. This was the height of the Cold War, Soviet equipment was flowing to North Viet Nam, China was feisty, the United States was continually escalating the war in Viet Nam and the talk of pushing the red button to send missiles against Moscow or New York, depending where you sat, was on everybody's lips. Beatle recordings, such as "Back in the U.S.S.R.," were somewhat confusing as they suggested the other side was human too. But, in large measure, the times were simple. There were the good guys and there were the bad guys, and we were the good guys so we had moral permission to shoot the hell out of anything the other guy had. And out of that came games.

Part of the enduring Cold War posturing was the claims and counter claims about air defense capabilities. The United States had gone a long way toward a missile defense against incoming aircraft. But what about missiles? Aircraft were defenseless against them, and it became apparent that only a missile (or the imagined force screen, terrific in science fiction but impossible with existing or even projected technology) could counter a missile. So that's where the big defense money went, hidden in other bills approved by Congress, but there nevertheless. The spending may have been in secret, but the projects weren't. The press had a heyday with them. These were the projects no one talked about, yet a good reading of the *New York Times* could keep the Soviets as well informed as most Congressmen. Even some names broke through the barrier of silence. A favorite: Surface to Air Missile Interceptor, or S.A.M.I.

Now there's a game name if you ever heard one. So Midway Manufacturing Company jumped on it, and put it on an oversize game that forever changed the look and play of arcade machines. It was before the video boom, yet set the standards for video cabinet design. Essentially it was a modified gun game but didn't look it because the action was based on — you guessed it! — pushing the red button. The top graphics showed a big city, maybe New York, under missile attack, and you were saving it. Big job for a quarter.

Midway spec sheet copy describes the game: "Realistic video targets. Solid state sound. Built-in step stool slides away under cabinet. Adjustable hit zone. Extended play adjustable. Simplified mechanisms. Adjustable time. 3 dimensional landscape. Deluxe finished cabinet. Precision projection system. 2-25 play 10¢ or 25¢ optional." Two scoring drums kept track of score and time on the top backglass while you punched away at that red grip trigger, with all sorts of nonsensical dials on the face of the operating panel. But the biggest break in perception came with the Midway spec sheet. Showing a very glitzy blond in a silver skin-tight space suit, with money pouring out of the cash box, she says: "Ohh...That S.A.M.I. He just never stops putting out." Arcade games were growing up.

Nutting Associates, Inc.

COMPUTER SPACE Floor Video Amusement Machine

1971



Often we don't realize it when the world changes. And as often as not, we don't know who is going to make a major mark in the world their first time out. Then, when they do, after a second or fifth or fiftieth try, we forget where it all started, if we even knew in the first place. The Nutting Associates COMPUTER SPACE encompasses all of these eventualities.

It all started with an engineering student named Nolan Bushnell. In 1965, at the University of Utah, Bushnell was introduced to the lab game SPACEWAR, a cult sport that spread across the college and university circuit. From coast to coast engineering students were using their massive and expensive school computers to play games until the schools caught on and issued rules and regulations that ended the activity. But Bushnell never forgot the game, or the fact he had speeded it up by making the rocket ships move faster. A graduate electrical engineer, Bushnell fiddled with the idea on his own, living and working just outside of San Francisco. Fed up with the real world of computer electronics, and intrigued with coin machines (he had operated them while in college, picking up used machines cheap, fixing them and putting them in fraternity houses on a split basis), Bushnell took the chance of his life, quit his job, and took a job as the chief engineer of a small coin machine maker in the area, Nutting Associates, Inc. of Mountain View, California. Nutting made fortune tellers and a clever line of information machines called COMPUTER QUIZ, IQ COMPUTER and others. Nutting was just entering the game field with their RED BARON and was looking for other ideas. Bushnell had beaut!

Working out the details in his own Syzygy Company with two partners, Bushnell leased the game to Nutting Associates, who brought it out late in 1971, eventually making about 1,500 games. It was SPACEWAR updated, with Nutting giving it the name COMPUTER SPACE, and assigning it the model number NA-2010 ("NA" for Nutting, Associated, "2" for second, or amusement line, "10" for tenth machine). The announcement blasted out the news "Nutting Associates of California has done it again! Amen, Brother! The only innovative idea and concept in the entire industry. Tired of driving games? Tired of the same old cabinet styling and game features? So are the players! Introducing the completely all new COMPUTER SPACE NA-2010. Available now at your distributor. Hurry! Your customers deserve a break!"



Sandy Gold Collection.

And they got it! A completely new cabinet design, fabricated in fiberglass, was created. The play panel is simplicity itself, with Rotate Right, Rotate Left, Thrust and Fire Missile buttons. Other than Start Game, that's all. But the game didn't catch on. Too far out, perhaps (Bill Nutting, the producer, would later say: "We blew the coin-op industry's mind."). If you want to see one, a playable model is on display at the National Video Game and Coin-Op Museum at 801 N. Second Street in Laclede's Landing in St. Louis. A 2-player joystick (the first!) version came out in 1972, and then Nolan Bushnell left to form Atari. Someday, these initial video games will be very valuable, and you saw it here first.

Williams Electronics, Inc.

LINE DRIVE Table Amusement Machine

1972



Patrick Hamelet Collection.

But life goes on. Even if the arcade field was about to go spacey, the bread-and-butter business was still there, relatively unchanged. So when 1972 came along, it was time for yet another Williams baseball game. However, consider the ramifications. After 20 years of such games there wasn't much that hadn't been done, and with 3 or 4 makers doing the same thing on a sporadic basis just about every game name that could be used had been around the bases at least once.

So what! Williams was always game for the game. The cabinets changed, and the rails, the legs and the backglasses, all following the evolutions in pinball design (some writers and industry sources still classify these machines as pinball games, but they aren't). But the basic play remained the same. Just like its namesake game, you batted a ball, and where it went determined what happened in base running and score building. What did change was the technology. The Williams LINE DRIVE, coming out in March 1972, was "Solid State Sound. No moving parts. Background sound of crowd, increased when a hit is made. Explosion (of crowd sound) when a run is scored. Siren when a home run is hit." Now that's exciting! One of these games in a bar would be a self-contained crowd pleaser, and make people outside the door wonder just how many bodies were crowed into the facilities, and how long would they have to wait for a sandwich?

Other LINE DRIVE games offerings are more traditional, although even they were enhanced. The spec sheet provides the details: "Baseball action, animation, sound, profits! (Available in) Regular, Novelty or Extra Inning model. Lively playfield action. Animated base running unit. Variety pitches and hits. Score, special or extra innings. High score, bull's eye Grand Slam Grand Slam Home Run, 3rd, 6th or 9th adjustable. 3 outs per inning — 1, 2, or 3 innings per game adjustable. Single, double or triple chutes. The size is right: width at back box 27-1/2", length 61", height 72". Crated weight 346 lbs."

The Williams baseball games never grow old, and operators still run them. From a manufacturer's point of view that was part of their problem. Why replace a productive game for big money that does the same thing as the game you've got? There's no way to answer that. As a result the Williams baseball games diminished in production numbers as the years went by, and their parts and components ended up in the firm's pinball catalogs rather than under their own arcade classification. You could just see the game format becoming a dying breed. And therein lies an opportunity. Values for these games were very reduced at the time of this writing, more for lack of vision and an overabundant supply than for lack of game characteristics. By the time this book was published, they had doubled in value. They're a mighty bargain in entertainment, and that just can't last as one at a time the available games are snapped by by collectors. If you're at all interested in baseball, get in the game now.

For-Play Manufacturers Corporation

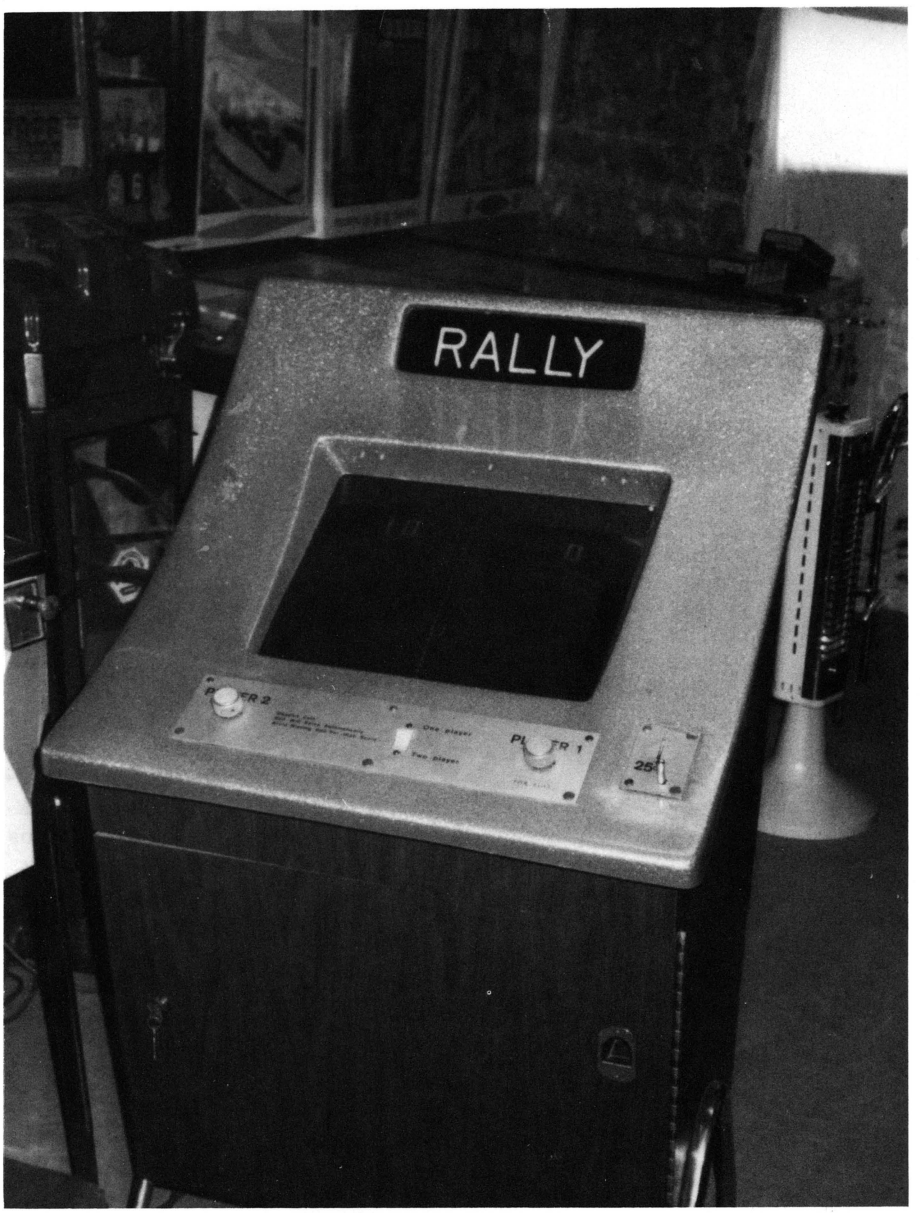
RALLY Floor Video Amusement Machine

1973

The video revolution is underway. Remember Nolan Bushnell 2 pages back? Well, if you don't know it by now, he became the most successful entrepreneur in coin machine history. As so often happens in coin machines, one man single-handedly changed the entire industry. In the case of Bushnell, he changed the players, too. And in a quirky turn of fate not of his doing, but certainly of his starting, he led to America's loss of dominance in the field. Nolan Bushnell changed it all, and he did it with one game.

With his royalties from the Nutting COMPUTER SPACE, which really didn't add up to much, he left Nutting Associates, Inc. and went off on his own. He had developed a video ping-pong game he called PONG, and trotted it around the coin machine industry looking for a taker after Bill Nutting turned it down. So he took it to Midway, Chicago Coin, Bally and few others who all said a flat "No!" In their defense, Bushnell was asking for quite a nut, with heavy cash up front and a substantial royalty or a million dollar buy-out. Instead he got laughed out. So the Nutting royalties were pumped back into legal fees and a new company name: Atari, Inc. And by the middle of 1972, Bushnell found himself in the coin machine manufacturing business. He took to it like a duck to water — the same for advertising and promotion — and on November 29, 1972, the Atari PONG hit the street. Things have never been the same since.

By 1973, PONG was everywhere; in airports, at tollway restaurant and amusement shops, in what was left of train stations, at supermarkets and arcades, movie lobbies and student unions. Placements that no one could get before begged for the PONG game, and Atari was launched. So were copy-cat models by the droves. The lab test technology that created PONG didn't create a ping pong game. It created a simulated bouncing ball on a TV screen. Or a puck. Or anything else that moved when hit. So tennis games, hockey, soccer and other goalie games were added to the PONG potential. Allied Leisure, Chicago Coin, Midway and other major makers swiped the idea and ran with it. So did a bunch of start up companies, mostly in Southern California.



Paul Olson Collection.

One of these was the newly formed For-Play (playing on sexual innuendo and using a corruption of the word foreplay) Manufacturers Corporation of Burbank, California, nor far from Nutting and Bushnell's stamping grounds. They made a Chinese copy of PONG called RALLY in a more modern, slope front cabinet. Two player dials marked Player 1 and Player 2 controlled the game. The For-Play flyer explains it from there: "RALLY Competitive Fast Action Space Age Game. No two games alike. Creates repeat play. Fun for all ages. Record profits already proven on location. 25¢ play. One or two can play. Large 16" screen. Real live sound effects. Service free. All solid state. Only moving parts are control knobs and coin rejector cradle. Dimensions: 25" x 29" x 46:. Shipping weight 164 lbs." It was the wave of the future.

Midway Manufacturing Company
GUN FIGHT Floor Video Amusement Machine
1975-1976



Photo by Dick Bueschel.

Wait! It doesn't look like any other gun game you ever saw before. In fact, with that big video screen it looks like an oversize PONG game. Only 3 years have passed since the Atari PONG entered the marketplace, and already the massive shift to electronics has taken place.

There's another massive shift at work here, too. For all of its gun slinger graphics and misleading, open range, chuck wagon looks the Midway GUN FIGHT is something the industry hadn't seen before. It's Japanese! It's also the first arcade machine to introduce the microprocessor to American audiences, making it the prototype for all of the game playing software to follow. It is a landmark machine.

Behind all of this there is a significant story. Midway had been making a major mark on the coin-op industry since its beginnings at the end of the fifties, but by the early 1970s things had slowed down to a crawl. There were new game ideas out there, and the bat-the-electronic-ball PONG and follow-on games were changing the way Americans viewed coin-ops. For one thing, the age of the player got older because the new solid state games required greater concentration and involvement. And that led to the next change. Player perceptions advanced faster than game technology, and soon they were expecting more than they could get. Midway president Hank Ross was faced with a dilemma; how to give the marketplace the advanced technology it wanted without losing years (and a small fortune) in development time? It began to dawn on Ross and the Midway board that there was a way to do it without the commitment of unavailable time and money. Import the games. It had never been possible before as the United States was always running light years ahead of any foreign competition. But from 1972 forward that was changing, leading to the post-WW2 emergence of Japan as a leading technological nation.

Japan had already made major steps toward an important role in the home entertainment industries, starting with borrowed American technology. They did the same thing with arcade games. PONG, and the Atari influence, made a greater impact in Japan than it did in the United States. Soon there was a proliferation of Japanese companies in game design and production, with Tokyo-based Taito Corporation the entrenched leader. Established as an operating company in 1953 by a White Russian emigre to Japan named Michael Kogan, Taito became the Atari rep in Japan. One look at PONG and its descendants and Taito was in the same business. After a succession of bouncing ball games, and other arcade devices (including a game called ELEPONG), Taito moved deep into the high tech area by bringing the microprocessor and dedicated game software into the business. Their first gun game, WESTERN GUN, didn't go far. But it led to GUN FIGHT and a contact with Midway through its export arm Taito Trading Company, Ltd. Starting in 1974 Midway imported the game, learned how to make it, and then produced it under license. It opened the door to the Japanese game invasion and made Midway healthy once again. Midway called GUN FIGHT "...a two player shoot out (with) complete player control." And there they are, the grip trigger handles of the future. The operator could also adjust the game time, so people fell in love with them. Even Hugh Hefner had one in the Playboy Mansion.

Midway Manufacturing Company

SPACE INVADERS Floor Video Amusement Machine

1978-1980





Photos by Dick Bueschel.

Four years later Midway tried the same stunt, only this time they got far more than they bargained for. A lot had happened in the meantime. Others pursued the Japanese connection, but not exactly with a vengeance. It was there if they needed it now and again, but game development was still viewed as an American prerogative. But nobody told them that in Japan. Game development raced through rapid successions, and the coin-op arcade became a Japanese obsession. In the 2 years after Taito's GUN FIGHT over 50,000 arcades opened up in Japan, soaking up about 3 times as many video coin-ops. The pace of development was so staggering Japan far outstripped the United States in new game development.

Then SPACE INVADERS came along. This shoot-em-up video was so strong that within months after Taito introduced it in Japan on June 16, 1978 they were shopping around for licensed-production within the country to meet the crying demand. Into this melee strolled Midway once again, looking for a next game. SPACE INVADERS was appealing because it used the same processing system as the earlier GUN FIGHT, plus an additional burn-in. So, starting in October 1978, Midway began making the game in order to have an inventory on hand once the game was introduced at the November AMOA industry show (Note: Author Dick Bueschel was there, and played the game at the show. On the first day he was one of the few that did, along with a number of Japanese at the Midway booth. By the next day the game was catching on with long lines waiting to play by the show's end). They came out of the show on back order, and a year later were sitting on the most successful coin-operated machine made to date. In that one year Midway turned out over 35,000 SPACE INVADERS games in a variety of models, and that didn't even begin to address the tens of thousands made in Japan for their domestic and European markets. This one game established the video game industry as a significant one in Japan, and outsold anything ever made before in the United States.

What's in this game to make it such a barn burner, and the game that established the Hit Syndrome in the United States? First, it's the sound, the famous "heartbeat." When the player is faced with that first lineup of 55 space invader figures a the top of the screen the eerie, beating sound is low key. As the battle begins and your guns chip away at the physical presence of the enemy as they fire at you, the pounding speeds up and the beat gets louder. This isn't a game; this is a fight for space survival. As you knock off that first screen, and more come at you, the heartbeat becomes a heart pound matching your own and the sound is screaming at you. THEN SUDDENLY IT...stops! There had never been a game like this before. Even the graphics on the cabinet bespeak the horrors of the invasion you just thwarted. After a game of SPACE INVADERS the world owes you. A tip: for high score destroy each invader one at a time. If you try to knock them off in sweeps they speed up their attack. SPACE INVADERS is the top dollar earner of all time (even PAC MAN never matched it), but where are the tens of thousands of games today? True, they get boring, and they're only black and white, but by virtue of their impact alone some should be saved.

Project Support Engineering, Inc. (P.S.E.)

GAME TREE Floor Video Target Game

1978



Paul Olson Collection.

The idea of going offshore for new game ideas, unheard of 5 years before, became a dictum for success. Suddenly the scramble was on, and anything made anywhere but in the U.S. had hidden potential if not fortune making possibilities. Only it wasn't true. There was only one SPACE INVADERS in the world, and try as they might the U.S. importers or licensed producers of foreign games had a hard road ahead of them if they expected too much of their acquisition or, in some cases, if they expected anything at all. So others tried to do the job at home.

As a direct result of the import boon a whole gaggle of new American entrepreneur game producers surfaced, creating neophyte makers that sold and then serviced their lines, compounding their high tech problems beyond merely manufacturing the games. Project Support Engineering, Inc. of Sunnyvale, California, in the Silicone Valley area — commonly called P.S.E. — was such a firm, and a short lived one at that. Starting in January 1975 with an upright game called MAN EATER, P.S.E. scrimped along for 3 years until it closed its doors in September 1978. Along the way they had a few games of modest success, the GAME TREE video target game of January 1978 was probably the most outstanding. For one thing, it looks nice. Bright yellow and green full-leafed tree graphics are on the sides of its cabinet, with the targeted game animals sitting on the branches of the video visualized tree.

P.S.E. was a hard working outfit. After getting through their first coin machine season in 1975, by 1976 they had developed a new microprocessing technique that provided true random entries of target features across a play field, accompanied by realistic explosions an associated sound effects once the targets were hit. Fine tuning their system, by 1978 they had incorporated their new system into their floor cabinet gun game GAME TREE. Of it they said; "Go hunting...with GAME TREE. Turkeys trot, rabbits hop...squirrels jump from tree to tree. Be sure to miss the Hound Dog! He belongs to me. Animals appear randomly in a realistic outdoor woods setting. Experience the true sights and sounds. New one step front service door especially designed by P.S.E. Slide out platform with adjustable glides. 23" solid state monitor. Heavy duty steel based rifle. Backed by P.S.E.'s proven reliability. Featuring highly improved after sales service (Note: Suggesting they had problems when they first came out.). Order your GAME TREE now and watch it gobble up quarters."

The introductory press release told a little more about the game: "The theme, of course, is hunting as the player tries to score as many points as possible by shooting turkeys, rabbits and squirrels. The game also has P.S.E.'s usual penalty feature, in this case hitting the hound dog subtracts 500 points from the player's score. Turkeys are 200 points; squirrels, 300 points; rabbits, 400 points; and flying squirrels 500 points. Play is gauged by time, not by the number of shots. So a player can squeeze off an unlimited number of shots during the game." And that's what kept them coming back for more. But by the end of 1978 P.S.E. was gone, and the games became instant collectibles as the sales and back-up service ended. So P.S.E.'s are rare.

United (Williams) Manufacturing Company
KING TUT Table Shuffle Game
1979-1980

You think business in general is hard to follow? Ha! Think about coin machines. Once the video boom hit the pot was really stirred. Seeburg acquired Williams. Williams acquired United. Seeburg-Williams became Xcor International. Bally acquired Midway. And Chicago Coin went down the tubes. And that was only for starters. Everything was up for grabs while survivors made a pitch for pieces of technology they didn't have, and product lines with receptive markets gave value to holdings that otherwise weren't worth much. And that's exactly what Williams saw in the United puck bowlers.

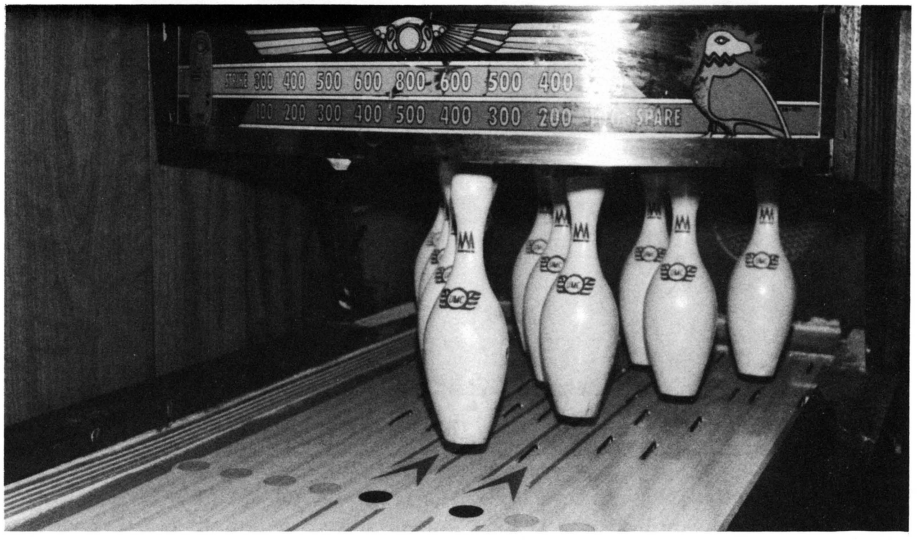
From a long line producer of everything, United Manufacturing had hunkered down to a commanding position in the bowler market and not much else. So Williams eyed the line (and the United plant at 3401 N. California Avenue in Chicago, literally around the corner only a few blocks away from Bally) and bought it, plant and all. Their gain was a long history and a solid name in shuffle alleys, bowling alleys and targette games. They wisely didn't want the United Juke box — which is what put the firm in financial trouble, and finally on the block, in the first place — so dumped the idea. But the rest was a gold mine. So Williams continued to produce the shuffles and bowlers under the United name.

There was logic behind this. Stan Harris out of Philadelphia, probably the largest operator in the country, gives a reason for this: "Alleys are big business. And if your game breaks down the night the bowling league comes in the bar, and another team comes in, you lost your big night." And United alleys didn't break down, so they had a solid name in the business. Williams solved the identification problem by signing the spec sheets and flyers, and manuals, while having a major piece of subhead copy say: "Shuffle Alley by United." Dozens of alleys made it to market that way for as many years. They still do, although the Williams name has finally supplanted United.

That wasn't the case in August 1979 when KING TUT came to market. An elegant puck bowler with great graphics, KING TUT was accompanied by manuals that solidly identified it as a game made by Williams Electronics, Inc., An Xcor International Inc. Company at 3401 N. California Avenue with no mention of the United name. Except on the game. The backglass graphics, rich in design and color with a golden King Tutankhamen bust staring at you with its youthful eyes (with the theme picked up from a King Tut show from the Egyptian Museum making the rounds of the world's leading museums, repopularizing the young Pharaoh's face and artifacts once again after their discovery in the 1920s) carries the bold identification "United's KING TUT." Even the flip-flop simulated bowling pins are each emblazoned with the winged "UMC" (United Manufacturing Company) logo, although the Williams "W" appears above them at the throat of the pin. All in all it is a very colorful presentation, now lost to bars as a result of dart game popularity. But you can keep this wonderful game tradition alive at home. Collect one. On party night it'll always be busy.







Photos by Dick Bueschel.

Midway Manufacturing Company

PAC MAN Floor Video Amusement Machine

1980-1982



Photo by Dick Bueschel.

Video games started with competitive sports, such as the ping pong, tennis, basketball, hockey and the other 2-player athletic events of the early PONG games. Then, with SPACE INVADERS, they went warlike, with shoot-'em-ups becoming standard fare. Then came PAC MAN, and the "cute" game was born. And just in time. There was both sociological (the good doctors saw the video games as expressions of violence) and player (they were getting downright bored with the eternal guns and rockets) concern with the prevailing formats. It was time for something new.

Actually, there was a lot new, and it went beyond the games. Midway became "A Bally Company" when the Chicago-based nation's largest coin machine maker bought into the video game business by acquiring the Franklin Park upstart on a high. In Japan, newly formed Namco, Ltd. in Tokyo, a reorganization of the Nakamura Seisakusho Ltd. operating company, acquired an Atari license for the SPRINT 2 in 1977 and became a game maker. By the end of the year they were making their own games. They licensed one to Bally Midway at the end of 1979 called GALAXIAN, a modest success, which gave the American maker first shot at their next hit game. It came out in Japan in August 1980 as PUCK-MAN, a maze game that was so successful it was quickly picked up when re-named export models came to the U.S. in September as PAC-MAN. With a lot of cross-national help and some hefty payments to Japan, Midway was in production by November.

Where Midway's 1978 SPACE INVADERS may have become the most successful coin game to date, nobody was prepared for the impact of PAC-MAN. It alone made coin machines a bigger business than the movies for a year or two, and at one point was the best known amusement device in the world. Starting with 3 PAC-MAN gobblers chased by 4 phantoms (named Shadow, Speedy, Bashful and Pokey but better known by their nicknames Blinky, Pinky, Inky and Clyde), the happy yellow-faced PAC-MAN can eat up the enemy if you know what you're doing. The maze, its eternal battle of good against evil and the graphics images in color — and it is the color that makes PAC-MAN such an outstanding game — burst on the American media scene like a bombshell. PAC-MAN ended up on magazine covers, on T-shirts and in tournaments as well as on television, and the publicity drove the game. Soon players were getting so good the original "Slow Game" was giving its expert players over 30 minutes of playing time for their quarter. So new boards were created, with later production of the "Fast Game" a tougher customer to master. Other chip modifications and speed-up kits made the game even harder to beat.

But the players loved it. The life of a PAC-MAN on location was far greater than previous games, and some are still out there making money. When 8 year old Jeffrey R. Yee of California set the record of 6,131,940 points at San Francisco's Palace of Fun and Arts in its PAC-MAN Parlor on December 5, 1982, he got a letter of congratulations from President Ronald Reagan. In all 96,000 games were produced, with considerably more of the advanced versions. And that's not counting the tens of thousands of illegal copycat games under similar names. For the historical record, the Smithsonian Institution in Washington, DC has a PAC-MAN on exhibit, and if an arcade machine collector has only one game, it's usually a PAC-MAN.

Sega/Gremlin (Gremlin Industries, Inc.)

ZAXXON Floor Video Amusement Machine

1982-1983

Don't get the idea that shoot-'em-up games ended with PAC-MAN. Cute didn't replace combat, and when Gremlin's ZAXXON came along the might-makes-right crowd got a real shot in the arm by two dramatic on-screen advances. Color was one. Sure, PAC-MAN had color, but it was flat and like an animated cartoon. But on ZAXXON it was...well, that was the second and most alluring advancement. ZAX-XON's combat seems to be three-dimensional. You are in a space war, assaulting some mythical castle in the sky, and you sweep in from the left in a magna-sonic air frame. Everything happens so fast. You're suddenly there, looking for targets, and the defenders know where you're coming from so they've got all their guns aimed your way. All of this action is handled by state-of-the-art hardware, controlled by your all-powerful joy stick and a pistol grip that unleashes your arsenal. Except you're running out of fuel. So you've got to blast the castle to smithereens while not flying into a wall, get past the debris to refuel, and then face an enemy fighter fleet in space. If you get blasted along the way you get a new ship, up to 5. And the lower you fly, the longer you survive.

Until it's dogfight time, and free for all. Knock them down, and you're zooming into yet another fortress. Only this one is tougher with a narrower flight aisle and more guns. Maneuver up or down, forward or back, a simulated shadow gives you an idea where you are. So does the sound. Blasting two ways over the fortress castle, then with the sound of a space wind in the open stretches, the sound is so much a part of the game the player is swept into the unreal world in a way no game before it had ever done. ZAXXON was life, and a surviving player was a hero. He or she had to be, because there are 5 successive and increasingly difficult castles to capitulate, 4 battles in space, and finally a monster robot ready to hurl a homing-missile your way. You've got to stop that missile with 6 hits before it is stopped, and when you do the castles-in-the-sky start all over as you run out of ships and fuel.

There's no rest for the victorious! There are even game adjustments to up the number of enemy fighters as well as reduce the ships you get for your quarter. So the conclusion is always the same. The defenders eternally have more to stop you than you do to knock them out. So the good guys always lose. But what a way to go. When it came out, ZAXXON was called "...the most realistic space game of them all" by one of the many computer and video arcade game consumer magazines that flourished during this period (which all disappeared when the arcade video bubble burst a few years later).



Photo by Dick Bueschel.

The game was developed by Gremlin Industries, Inc. of San Diego, California, a firm founded in 1973 by Frank Fogleman. From the very beginning Gremlin turned the tables on the industry, licensing its video maze game BLOCKADE to Nakamura Seisakusho Ltd. for Japanese production in 1977. In 1978 the firm had the influx of new money when it became a subsidiary of the mighty Sega Enterprises Inc. of Los Angeles. As SEGA/Gremlin they became a major factor in international video games, and a substantial income producer for SEGA and its corporate owner Gulf & Western, a structure that crumbled when the video boom ended, only to come back to life in a different mode.

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ARCADE 1

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Illustrated Historical Guide to Arcade Machines

Volume 1

Ancient Lands to Wonderlands 3600 BP to 1905

Volume 1 Price Guide

This price guide is a companion to *Illustrated Historical Guide to Arcade Machines, Arcade 1* by Richard M. Bueschel and Steve Gronowski, published by Coin Slot Books, Division of Hoflin Publishing Ltd., 4401 Zephyr Street, Wheat Ridge, CO 80033-3299, Tel. 1-303-420-2222. This insert can be removed without damage to the editorial or historical content of the book if desired and can serve as a handy buying-or-selling value reference at auctions, shows, antique shops or Flea Markets.

The vintage arcade machine prices indicated in this folder correspond to the 100 collectible machines illustrated and described in *Arcade 1*. Similar price guides will be available for all 5 volumes in the series as published. The value classifications are based on an Arcade Machine Pricing Philosophy advanced by co-author Steve Gronowski designed to eliminate the weighted factors of a single owner bias, irrational auction prices — up or down — and the dichotomy of pricing proposed by collectors (buying) and dealers (selling). This philosophy and the six classifications for pricing are explained in detail in this price guide.

Composition of the panel

Actual prices and estimated values have been provided by a panel of seven vintage arcade collectors, historians and dealers, augmented by data on actual dollar transactions between collectors and dealers as well as open auction prices paid up to the date of pricing where such data is available. The panel of seven was selected to provide as much rational pricing input as practically possible and to provide an equalizer for prices that may inadvertently be based on biased judgements and over-or-under enthusiastic estimates. In addition, the panel members represent the major arcade machine collecting areas of the country in order to balance local value irregularities.

The pricing panel is made up of the following members:
Ken Rubin, Brooklyn Heights, NY
James W. Smith III, Greenwich, CT
Tim LaGanke, Novelty, OH
Bob Legan, Euclid, OH
Steve Gronowski, Barrington Hills, IL
Joe Vojacek, Chicago, IL
Dick Bueschel, Mt. Prospect, IL

Each member of the pricing panel brings broad spectrum knowledge to bear on the evaluation of arcade machines within their specific area of expertise. As such, each pricing authority therefore contributes both strengths and weakness to the assignment, the latter tempered by the knowledge of the other members of the panel. Final pricing was assembled by the authors primarily based on overall averages on the inputs provided.

Pricing Classifications

In line with the Arcade Machine Pricing Philosophy, each machine has been priced in six classifications; "Excellent" being near mint and most desirable with "Incomplete" denoting the lowest order of desirability.

The class descriptions used for pricing the machines are as follows:

Incomplete: Non-working, with parts, working components and graphics missing or virtually beyond salvage. Cabinet broken, incomplete or rotted. Paper and instructions damaged or missing. Cosmetic glass severely damaged, broken or missing. "Basket Case." Requires complete restoration.

Rough: Rough condition. Worn out mechanism. Well worn cabinet and graphics. Broken parts. Cosmetic glass badly worn or damaged. Often not working but mechanically complete. Paper worn but intact.

Fair: Machine in good to fair working condition. Now new parts needed. Appearance acceptable but needs work. Paper intact with cosmetic glass usable without touch up or change. Can be made to operate with minor adjustments.

Good: Ready to operate but needs some work. Cabinet, paper, graphics and cosmetic glass in good shape. Needs work on appearance. Good candidate for restoration.

Excellent: Near mint condition, possible brand new with some minor wear and aging acceptable. Cabinet, paper, graphics and cosmetic glass virtually mint. Readily operates.

Restored: Rebuilt and tuned up to mint or even better condition with the understanding that the restored machine retains its original identity and integrity without imaginative or creative changes that alter it from its original. Not too bright, polished or flashy unless required to match original.

Machine Definition

The description of a vintage coin-operated device as an "Arcade Machine" does little to define the actual machine or its working characteristics. Unlike Slot Machines, Trade Stimulator, Pinball Machines or Scales, Arcade Machines were produced in a wide diversification of application, with one form dramatically different from another. For purposed of clarification the following distinct classes have been established for identification purposes throughout this series of Guides.

AMUSEMENT
ATHLETIC
AUTOMATON
BOWLING
CARD VENDER
DIGGER
DISPENSER
EXHIBITION
FORTUNE
INFORMATION
KIDDIE RIDE
MUSIC
PEEP SHOW
PHOTOGRAPH
RECORDING
SHOCKER
SHUFFLE
STAMPER
TARGET
VIBRATOR
VIDEO AMUSEMENT
VIDEO BOWLING
VIDEO FORTUNE
VIDEO SHUFFLE

Using The Prices In This Folder

The vintage machine prices indicated in this folder have been based on averages of current market values of "best estimates" for the machines listed as provided by a panel of seven authorities at the time of publication. These prices should not be regarded as firm buy-or-sell figures but rather should be used as approximate value indicators. Like many fine antiques, vintage coin machine values tend to frequently fluctuate, both up and down, with market values different than those on these pages to be expected at any point in time. Buyers and sellers should expect to pay or receive amounts based on the many current market variables of value, condition, special features and machine popularity — particularly the current "Fad Factor" — at the time of any transaction. While the prices expressed in this folder cannot be expected to reflect the precise market values at variable points in time, they do provide a guide to specific machine desirability and reveal the status relationships between one machine and another.

COLLECTIBLE ARCADE MACHINE PRICE GUIDE

Providing pricing in six classifications for the 100 vintage arcade machines illustrated and described in Arcade 1,"*Illustrated Historical Guide to Arcade Machines, Volume 1.*"

NO.	PAGE	MANUFACTURER	Incomplete	Rough	Fair	Good	Excellent	Restored
1.	202.	William T. Smith THE LOCOMOTIVE (1885-1889) Floor Exhibition Machine	$400	$1,000	$3,500	$7,500	$10,500	$8,500
2.	203.	Peter Beetz MUSCLE DEVELOPER "Push-Pull" (1888-1904) Pedestal Athletic Machine	$225	$400	$1,800	$2,000	$3,000	$2,750
3.	204.	National Automatic LIFT, GRIP AND FINGER TEST (1891-1894) Floor Athletic Machine	$140	$225	$450	$700	$950	$850
4.	205.	Edison KINETOSCOPE (1894-1896) Floor Peep Show	$12,000	$25,000	$32,000	$37,000	$40,000	$35,000
5.	206.	Roovers Brothers MADAME ZITA "Mechanical Zita" (1895-1903) Floor Fortune Teller	$2,000	$3,500	$7,000	$9,000	$12,000	$10,000
6.	207.	Watson Machine And Novelty MEDICAL BATTERY (1897-1898) Counter Shocker Machine	$120	$300	$600	$1,000	$1,400	$1,200
7.	208.	Midland ELECTRICITY IS LIFE (1899-1909) Counter Shocker Machine	$125	$200	$550	$1,000	$1,200	$1,100
8.	209.	Automatic Spirometer AUTOMATIC THERAPY (1900-1902) Counter Shocker Machine	$300	$600	$1,000	$1,500	$2,000	$1,800
9.	210.	Mills Novelty ELECTRICITY IS LIFE (1900-1902) Pedestal Shocker Machine	$250	$400	$1,400	$2,500	$3,200	$3,000
10.	211.	Mills Novelty NEW QUARTOSCOPE (1901-1903) Floor Peep Show	$200	$300	$900	$1,450	$2,200	$1,800
11.	212.	American Mutoscope MUTOSCOPE MODEL DL "Iron Horse" (1901-1909) Floor Peep Show	$450	$900	$1,200	$2,500	$3,800	$3,500
12.	213.	Mills Novelty WINDMILL CANDY MACHINE (1902-1929) Pedestal Dispenser Machine	$150	$450	$800	$1,500	$1,800	$1,650
13.	214.	Mills Novelty 1904 PNEUMATIC PUNCHING MACHINE (1903-1913) Pedestal Athletic Machine	$350	$550	$850	$1,500	$2,600	$2,200
14.	215.	Howard THE HANDSHAKE"Uncle Sam" (1904-1905) Floor Athletic Machine	$450	$2,200	$6,800	$9,000	$14,500	$12,000
15.	216.	Peterson MEDICAL ELECTRO BATTERY (1904-1908) Counter Shocker Machine	$165	$400	$750	$900	$1,200	$1,000
16.	217.	Caille Bros. TUG-OF-WAR "Platform Style" (1904-1913) Floor Athletic Machine	$800	$2,400	$4,200	$6,500	$7,500	$6,750
17.	218.	Rosenfield TWISTER (1904-1910) Pedestal Athletic Machine	$250	$375	$650	$1,000	$1,600	$1,500
18.	219.	Rosenfield 1904 ILLUSTRATED SONG MACHINE (1904-1914) Floor Musical Peep Show	$400	$3,500	$6,800	$11,000	$14,000	$12,500
19.	220.	Mills Novelty WIZARD "Wooden Wizard" (1904-1925) Counter Fortune Teller	$65	$115	$275	$435	$500	$450
20.	221.	Mills Novelty 1905 AUTO-STEREOSCOPE (1905-1925) Floor Peep Show	$300	$450	$700	$1,100	$1,500	$1,200
21.	222.	Caille Bros. MASCOT "Floor Style" (1905-1917) Floor Athletic Machine	$900	$1,800	$2,400	$3,500	$5,500	$4,500
22.	223.	Caille Bros. OLYMPIA PUNCHER (1906-1913) Pedestal Athletic Machine	$375	$650	$2,350	$4,850	$6,000	$5,500

NO.	PAGE	MANUFACTURER	Incomplete	Rough	Fair	Good	Excellent	Restored
23.	224.	Charles M. Weeks THE MYSTIGRAPH (1906-1913) Pedestal Fortune Teller	$200	$500	$850	$2,000	$2,500	$2,200
24.	225.	Roovers Brothers AUTOMATIC ELECTRIC MACHINE "Be Healthier" (1906-1913) Pedestal Shocker Machine	$200	$500	$900	$3,850	$5,500	$5,000
25.	226.	Caille Bros. WHEEL OF FATE "Gentlemen" (1907-1917) Floor Fortune Teller	$1,200	$2,500	$3,200	$4,000	$5,500	$4,750
26.	227.	Caille Bros. APOLLO (1907-1917) Floor Athletic Machine	$750	$2,400	$5,000	$7,000	$9,500	$9,000
27.	228.	American Novelty SCULPTOSCOPE (1908-1924) Counter Peep Show	$35	$95	$150	$250	$275	$265
28.	229.	Roovers Brothers THE EDUCATED DONKEY (1910-1930) Pedestal Fortune Teller	$1,500	$3,500	$7,000	$17,500	$20,000	$18,000
29.	230.	Exhibit Supply TRUE LOVE LETTER (1917-1927) Counter Card Vendor	$35	$75	$175	$400	$500	$450
30.	231.	Bennett Automatic PICTURE MACHINE (1920-1926) Floor Peep Show	$300	$400	$700	$1,200	$1,700	$1,600
31.	232.	Exhibit Supply DUOSCOPE (1922-1926) Counter Peep Show	$65	$100	$150	$300	$475	$350
32.	233.	Exhibit Supply ORACLE (1922-1931) Counter Fortune Teller	$30	$65	$175	$225	$465	$350
33.	234.	Exhibit Supply RADIO LOVE MESSAGE (1923-1931) Counter Card Vendor	$25	$50	$180	$300	$525	$425
34.	235.	Harvard METAL STAMPER "Ornate" (1923-1936) Floor Stamper Machine	$120	$200	$300	$450	$750	$700
35.	236.	Gatter Novelty GRANDFATHER'S CLOCK (1924-1927) Floor Athletic Machine	$200	$350	$500	$1,400	$1,650	$1,500
36.	237.	Information Vending INFORMATION (1925-1931) Counter Information Machine	$40	$55	$150	$450	$500	$475
37.	238.	Globe Amusement LIGHT HOUSE GRIP TEST (1926-1927) Floor Athletic Machine	$225	$450	$700	$1,200	$2,350	$2,200
38.	239.	Globe Amusement RAISE THE DEVIL (1926-1927) Floor Athletic Machine	$375	$750	$1,200	$1,400	$2,400	$2,200
39.	240.	Mills Novelty 1926 BAG PUNCHER (1926-1930) Floor Athletic Machine	$250	$775	$1750	$2,250	$3,100	$3,000
40.	241.	Mills Novelty 1926 LARGE ELECTRIC SHOCK (1926-1930) Floor Shocker Machine	$1,000	$2,500	$3,500	$4,250	$6,800	$5,600
41.	242.	A.B.T TARGET SKILL (1926-1930) Counter Target Game	$30	$45	$75	$180	$225	$200
42.	243.	International Mutoscope ALL STEEL MUTOSCOPE (1926-1929) Pedestal Peep Show	$45	$125	$450	$800	$1,250	$1,200
43.	244.	Norwat STEAM SHOVEL (1926-1931) Floor Digger Machine	$900	$1,000	$3,200	$5,000	$7,750	$6,500
44.	245.	Exhibit Supply HOROSCOPE (1927-1932) Floor Fortune Teller	$120	$250	$600	$700	$900	$800
45.	246.	Exhibit Supply HINDOO (1927-1930) Counter Fortune Teller	$55	$95	$160	$225	$300	$265
46.	247.	Exhibit Supply STRIKING CLOCK (1927-1938) Pedestal Athletic Machine	$95	$425	$700	$1,600	$2,300	$2,200
47.	248.	Exhibit Supply ELECTRIC ENERGIZER (1928-1932) Floor Shocker Machine	$750	$1,000	$2,400	$3,000	$3,600	$3,250
48.	249.	Doraldina PRINCESS DORALDINA (1928-1932) Floor Fortune Teller	$1,600	$2,200	$5,000	$10,000	$14,000	$12,500
49.	250.	Chester-Pollard THE DERBY (1929-1932) Floor Amusement Machine	$325	$1,000	$1,600	$2,900	$4,000	$3,500
50.	251.	Atlas Indicator BASEBALL (1930-1933) Floor Amusement Machine	$400	$750	$1,200	$2,750	$3,200	$3,000
51.	252.	Exhibit Supply Company COUNTER IRON CLAW MODEL E (1930-1932) Counter Digger Machine	$250	$600	$700	$1,500	$2,200	$2,000
52.	253.	Peo BARN YARD GOLF (1931-1932) Counter Amusement Machine	$45	$85	$100	$250	$300	$275
53.	254.	Hercules MIDGET BASEBALL (1931-1932) Counter Amusement Machine	$60	$125	$300	$425	$575	$550
54.	255.	International Mutoscope GRANDMOTHER PREDICTIONS (1932-1941) Floor Fortune Teller	$1,000	$1,800	$2,500	$3,500	$4,500	$4,250
55.	256.	International Mutoscope DELUXE CHAMPION (1933) Floor Digger Machine	$300	$575	$750	$1,700	$2,500	$2,200
56.	257.	Scientific Machine PANAMA DIGGER MODEL C (1934-1937) Floor Digger Machine	$375	$750	$900	$2,000	$3,250	$3,200

NO.	PAGE	MANUFACTURER	Incomplete	Rough	Fair	Good	Excellent	Restored
57.	258.	Exhibit Supply 1935 NOVELTY MERCHANTMAN (1934-1935) Floor Digger Machine	$335	$650	$1,500	$2,150	$2,450	$2,300
58.	259.	Exhibit Supply ELECTRIC EYE (1936) Floor Target Game	$250	$450	$700	$950	$1,400	$1,200
59.	260.	International Mutoscope CHEST-O-GRAPH (1938-1941) Floor Athletic Machine	$275	$450	$800	$1,100	$1,300	$1,200
60.	261.	Exhibit Supply 1938 LOVE METER (1938-1940) Counter Information Machine	$35	$85	$120	$165	$225	$200
61.	262.	International Mutoscope DELUXE MUTOSCOPE (MOVIE MACHINE) (1939-1949) Pedestal Peep Show	$110	$250	$350	$500	$750	$675
62.	263.	Holly UNIVERSAL GRIP (1939-1941) Counter Athletic Machine	$30	$65	$85	$150	$200	$175
63.	264.	Groetchen SKILL JUMP (1939-1942) Counter Amusement Machine	$45	$70	$90	$160	$285	$275
64.	265.	Exhibit Supply ASK ME ANOTHER (1939-1941) Counter Information Machine	$30	$65	$85	$175	$235	$200
65.	266.	Exhibit Supply CRYSTAL PALACE (1939-1941) Floor Digger Machine	$300	$450	$800	$1,200	$1,600	$1,500
66.	267.	Exhibit Supply MONARCH MERCHANDISER (1940-1942) Floor Digger Machine	$300	$450	$800	$1,200	$1,800	$1,700
67.	268.	Exhibit Supply 1940 PERSONALITY INDICATOR (1940-1948) Counter Information Machine	$60	$100	$150	$200	$240	$220
68.	269.	Exhibit Supply SMILING SAM (1940-1942) Floor Information Machine	$90	$125	$200	$550	$750	$700
69.	270.	Crabb THE GYPSY (1940-1942) Floor Fortune Teller	$60	$185	$375	$600	$850	$725
70.	271.	Keeney AIR RAIDER (1940-1942) Floor Target Game	$35	$55	$180	$375	$525	$500
71.	272.	Automatic Games ELECTRIC DEFENSE GUN (1941-1942) Counter Shocker Machine	$100	$150	$300	$400	$550	$500
72.	273.	Gottlieb IMPROVED DELUXE GRIP SCALE (1946-1950) Counter Athletic Machine	$15	$35	$60	$85	$125	$100
73.	274.	A.B.T. 1946 CHALLENGER (1946-1947) Counter Target Game	$25	$45	$75	$120	$240	$230
74.	275.	Marvel POP-UP (1947-1953) Counter Amusement Machine	$40	$85	$120	$200	$250	$225
75.	276.	Bally HEAVY HITTER (1947-1948) Table Amusement Machine	$30	$75	$150	$300	$500	$450
76.	277.	Mercury Steel DELUXE ATHLETIC SCALE (1947-1948) Floor Athletic Machine	$35	$65	$300	$400	$550	$525
77.	278.	Exhibit Supply SIX SHOOTER (1950-1953) Floor Target Game	$25	$40	$90	$175	$275	$250
78.	279.	Great Lakes System MERCURY ATHLETIC SCALE (1951-1957) Counter Athletic Machine	$25	$45	$75	$200	$275	$250
79.	280.	Chicago Coin DERBY (1952-1953) Floor Amusement Machine	$35	$75	$100	$250	$300	$275
80.	281	Munves GRANDMA (1953-1960) Floor Fortune Teller	$175	$475	$1,200	$3,000	$4,200	$3,800
81.	282.	Bally ABC BOWLER (1955-1956) Table Bowling Game	$30	$70	$90	$150	$300	$250
82.	283.	Chicago Coin STEAM SHOVEL (1956-1957) Floor Amusement Machine	$45	$100	$120	$225	$275	$250
83.	284.	Williams DELUXE SHORT STOP (1958-1960) Table Amusement Machine	$30	$150	$275	$400	$525	$525
84.	285.	United ATLAS SHUFFLE ALLEY (1958) Table Shuffle Game	$30	$70	$90	$150	$250	$225
85.	286.	Williams A.L. TWINS (1963) Table Amusement Machine	$45	$85	$220	$425	$650	$550
86.	287.	Williams MINI GOLF (1964-1965) Table Amusement Machine	$30	$70	$100	$300	$375	$350
87.	288.	Chicago Dynamic TRIUMPH (1964-1965) Table Shuffle Game	$30	$70	$90	$150	$275	$250
88.	289.	Chicago Dynamic SUPER PAR GOLF (1965-1966) Table Amusement Machine	$30	$60	$90	$275	$500	$390
89.	290.	Midway MONSTER GUN (1965-1966) Floor Target Game	$30	$65	$90	$200	$225	$225
90.	291.	Williams SNIPER (1970-1971) Floor Target Game	$30	$60	$90	$190	$225	$200

NO.	PAGE	MANUFACTURER	Incomplete	Rough	Fair	Good	Excellent	Restored
91.	292.	Midway S.A.M.I. (1970-1971) Floor Target Game	$25	$40	$60	$125	$175	$150
92.	293.	Nutting COMPUTER SPACE (1971) Floor Video Amusement Machine	$45	$200	$225	$400	$750	$625
93.	294.	Williams LINE DRIVE (1972) Table Amusement Machine	$35	$65	$100	$350	$595	$475
94.	295.	For-Play RALLY (1973) Floor Video Amusement Machine	$10	$25	$45	$60	$95	$90
95.	296.	Midway GUN FIGHT (1975-1976) Floor Video Amusement Machine	$20	$30	$40	$80	$100	$125
96.	297.	Midway SPACE INVADERS (1978-1980) Floor Video Amusement Machine	$20	$65	$100	$150	$200	$175
97.	298.	P.S.E. (Project Support Engineering) GAME TREE (1978) Floor Video Amusement Machine	$30	$40	$70	$100	$150	$125
98.	299.	United (Williams) KING TUT (1979-1980) Table Shuffle Game	$30	$60	$150	$225	$275	$250
99.	300.	Midway PAC MAN (1980-1982) Floor Video Amusement Machine	$85	$225	$350	$400	$450	$400
100.	301.	Sega/Gremlin ZAXXON (1982-1983) Floor Video Amusement Machine	$35	$80	$125	$250	$295	$275

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